
Engineer Memoirs

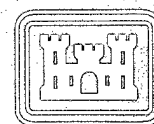
Lieutenant General

John W. Morris



20010724 028

DISTRIBUTION STATEMENT A
Approved for Public Release
Distribution Unlimited



US Army Corps
of Engineers®

Engineer Memoirs

LIEUTENANT GENERAL JOHN W. MORRIS

U.S.A. Retired

Office of History
Headquarters, U.S. Army Corps of Engineers
Alexandria, Virginia

Library of Congress Cataloging-in-Publication Data

Morris, John W., 1921–

Lieutenant General John W. Morris, U.S.A. retired.

p. cm. — (Engineer memoirs)

Includes index.

1. Morris, John W., 1921– 2. Generals—United States—Biography. 3. Military engineers—United States—Biography. I. Baldwin, William C., II. Title. III. Series.

UG128.M58 A3 2000

623'.092w4,34

dc21

[B]

99-057202

EP 870-1-63

Approved for public release, distribution is unlimited.

Foreword

This is the twelfth publication in the *Engineer Memoirs* series of career oral history interviews. The series contains the recollections of major figures in recent Corps of Engineers' history. These memoirs lend important perspectives to decision-making, now and in the future. By making these recollections available, the series preserves and shares the knowledge and experience of retired Corps officers and civilians.

John W. Morris had a distinguished career in the United States Army, which culminated with his tenure as Chief of Engineers from 1976-1980. He served as an Engineer battalion commander in Korea and as commander of the 18th Engineer Brigade during the war in Vietnam. In the Corps of Engineers, which became a major Army command while he was chief, he was District Engineer in Tulsa, Division Engineer of the Missouri River Division, and Director of Civil Works and Deputy Chief of Engineers in Corps headquarters. I recommend this oral history interview to members of the Engineer family and to those interested in the history of the Corps of Engineers.



ROBERT B. FLOWERS
Lieutenant General
Commanding

The Interviewer

Dr. William C. Baldwin is a historian in the Office of History, Headquarters, U.S. Army Corps of Engineers. He is a graduate of the College of William and Mary and received his doctorate in military history from the University of Michigan. He began his career in the Corps of Engineers with the Engineer Studies Center, where he wrote a history of the organization, *The Engineer Studies Center and Army Analysis: A History of the U.S. Army Engineer Studies Center, 1943–1982*. In 1983 he joined the Office of History and taught military history at the U.S. Army Engineer School. In addition to the history of military construction and oral history, he has worked extensively in recent years in the history of Army housing and housing privatization.

Acknowledgments

Appendices C and G reprinted with the permission of *The Military Engineer* and Appendix H reprinted with the permission of *The Waterways Journal Weekly*.

Marilyn Hunter, the Office of History's former editor, edited the interview transcript, and EEI Communications did additional editing and prepared the manuscript for publication.

Marilyn Hunter died while this interview was in preparation for publication. She was an excellent editor, a valued colleague, and a cheerful friend. We miss her.

Contents

Foreword	iii
The Interviewer	iv
Acknowledgments	iv
Introduction	vii
Career Summary	ix
Promotion History	x
Education	xi
Decorations	xi
Interview	1
Childhood and West Point Years	3
World War II and Early Post-War Assignments	13
Germany, Savannah, and Fort Leavenworth	23
Goose Bay and OCE	33
Tulsa District	46
West Point	60
Legislative Liaison	65
Vietnam	71
Missouri River Division	79
Director of Civil Works	91
Deputy Chief of Engineers	114
Chief of Engineers	
Internal and External Relationships	124
International and Military Projects	166
Civil Works Projects	185
Post-Retirement Career	204
Conclusion	215
Acronyms	221
Index	223
Appendix A: "Our Troubled Waterways"	A-1
Appendix B: "A Time for Reflection"	B-1
Appendix C: "Maintaining Engineer Readiness"	C-1
Appendix D: "The Corps of Engineers and the American Environment"	D-1
Appendix E: "Let's Get Back to Work"	E-1
Appendix F: "Reflections: An Interview with the Chief"	F-1
Appendix G: "Construction Management Training: An Industry/Academia Challenge" ..	G-1
Appendix H: "Changing Role of the Corps of Engineers—1970–1980"	H-1

Photographs

Lieutenant General John W. Morris	2
West Point Track Team, 1943	9
Graduation Picture, 1943	12
Geraldine King, 1946	17
Captain John W. Morris and Gerry Morris in Garmisch	25

Promotion to Lieutenant Colonel, 1953	29
President Lyndon Johnson's Dedication of the Eufaula Reservoir, 1964	52
Susan Morris Riding a Polo Pony in Tulsa	56
Colonel Morris Made an Honorary Chieftain of the Ponca Tribe, 1962	57
Colonel Morris in Tulsa	58
Colonel Morris as a "Tac" at West Point, 1965	61
Brigadier General John W. Morris in South Vietnam, 1970	73
Reunion of Former 18th Engineer Brigade Commanders, 1972	78
General Morris Assumes Command of the Missouri River Division, 1970	81
General and Mrs. Morris, 1972	90
Christmas Card Designed by Missouri River Division Staff, 1971	91
General Morris at Suez Canal, 1974	103
General Morris Addresses PIANC in Leningrad, 1977	104
Corps of Engineers Vessel, <i>Sergeant Floyd</i> , 1975	107
General Morris, Director of Civil Works	112
MG John W. Morris Sworn in as Deputy Chief of Engineers, 1975	117
MG John Morris and Son, Lieutenant John Morris, 1976	126
Kaw Dam Dedication Parade, Ponca City, OK, 1976	127
Corps of Engineers, 205th Anniversary Celebration, 1980	131
Meeting With President Jimmy Carter to Discuss Water Resource Projects, 1977	132
LTG John W. Morris and President Jimmy Carter, 1977	135
White House Meeting to Discuss Dam Safety, 1977	137
Corps of Engineers 204th Anniversary Celebration, 1979	145
Engineer Day Celebration, 1979	151
Emergency Operations After a Severe Snowstorm in Buffalo, NY, 1977	152
Groundbreaking Ceremony of Arthur Casagrande Building, 1978	163
The Dam at the Shimen Power Station.	167
The Dam at the Wujiangdu Power Station Under Construction	167
The Dam at the Panjiakou Power Station Under Construction	168
Site of Three Gorges Dam in China, 1980	169
Saudi Arabia's National Guard Headquarters Building	173
Dedication of the National Guard Headquarters Building in Saudi Arabia	174
General Bernard Rogers Visits the Engineer Topographic Laboratory	186
Portrait of General Morris by Meg Sergeant	194
General Morris Near His Retirement as Chief of Engineers, 1980	203
"Construction's Man of the Year," New York City, 1977	216
General Morris Receiving the Distinguished Graduate Award, 1998	218

Introduction
by
William C. Baldwin

John W. Morris was sworn in as 44th Chief of Engineers on 1 July 1976. He had already served in the Corps of Engineers' headquarters, the Office of the Chief of Engineers (OCE), for four years, first as Director of Civil Works and then briefly as Deputy Chief of Engineers. Figuring that he would be too old to fulfill a term as Chief of Engineers when the present Chief ended his term in 1977, he and his wife Gerry had already begun discussing retirement from his military career. Unexpectedly, the Chief, Lieutenant General William C. Gribble, Jr., announced that he was retiring more than a year early and that General Morris would be his successor. For more than eight years, General Morris occupied key leadership roles in the U.S. Army Corps of Engineers during one of the most turbulent decades in the organization's existence.

During the 1970s the growing concern about the quality of the country's natural environment hit the Corps of Engineers with full force. Not only did the Corps' large program of water resources development come under attack, but also Congress and the courts pushed the organization into an extensive and controversial wetlands regulatory role. Declining budgets and growing environmental criticism also dampened enthusiasm for construction of water resources projects that had been the Corps' forte in the decades after World War II.

The decade of the 1970s also brought profound changes in the nation's defense posture. Military expenditures declined markedly as the war in Vietnam ended with a corresponding decline in the Corps' construction for the Army and the Air Force. Two massive overseas construction programs, however, took up the slack. The reimbursable construction for the Saudi Arabian armed forces and the construction of Israeli airbases in the wake of the Camp David Accords gave the Corps a huge but delicate overseas workload. Keeping the demanding overseas and traditional domestic customers happy and fulfilling their expectations became major management challenges.

General Morris' military career leading up to his selection as Chief of Engineers was not atypical of the careers of other post-World War II chiefs. He graduated from West Point in the summer of 1943 after a three-year course shortened because of World War II. For three years he served in the Far East in Engineer aviation battalions and in staff positions after the war ended. In addition to the standard Army schooling at the Engineer School, Command and General Staff College, and the War College, General Morris obtained a master's degree in civil engineering at the University of Iowa.

His other assignments reflected the post-war Engineer missions of military construction, civil works, and service in troop units. In the mid-1950s he was area engineer at the Goose Bay Airbase building a variety of facilities under a cost-plus contract on a tight schedule enduring harsh climatic conditions. Earlier he began his long association with the Corps' water resources program by serving as executive officer in the Savannah Engineer District. In 1960 he returned to Engineer troop units where he had served as a young officer during World War II by commanding the 8th Engineer Battalion of the 1st Cavalry Division in South Korea.

Within each Engineer mission area, General Morris held both staff and command positions. Early in his career he was on the staff of the Engineer School in West Germany and later he served in the military personnel division of the Office of the Chief of Engineers in a period when the Chief had substantial Engineer personnel responsibilities. His Army staff experience came in the turbulent mid-1960s when he was deputy chief of Legislative Liaison.

By 1960 General Morris began to receive the all-important senior command positions. In addition to commanding troops in the 8th Engineer Battalion, 1st Cavalry Division, he served as a regimental

tactical officer at the U.S. Military Academy. In 1969 he returned to Engineer units in the field by becoming commanding general of the 18th Engineer Brigade in South Vietnam, which in addition to its combat duties was responsible for a major highway construction program. Command positions in the Corps of Engineers also were important. In the early 1960s he led the Tulsa Engineer District, which had one of the largest workloads in the Corps including major water resources and military construction projects. Five years after leaving Tulsa, General Morris returned to the country's heartland in 1970 as commander of the Missouri River Division just as the growing environmental movement began to have a substantial impact on the Corps.

With this diverse background of assignments, General Morris became Director of Civil Works under Chief of Engineers, Lieutenant General Frederick J. Clarke, in 1972. For the next eight years he held key positions in Corps' headquarters. After he retired from the Army in 1980 to the strains of the popular song, "Please release me, let me go," played by the Army band at his retirement parade, General Morris began an active career as a civilian engineer, first with a Dutch company and then with his own corporation. He also found time for teaching and philanthropic work, most of it related to his chosen profession and to the organization he had served for 37 years. Named Construction Man of the Year by the *Engineering News Record* in 1977, the former Chief of Engineers continued to receive honors in retirement, including most recently the Founder's Award of the National Academy of Engineering and recognition as a Distinguished Graduate of the U.S. Military Academy.

The oral history interview, which forms the bulk of this publication, is General Morris' reminiscences and reflections on his background and personal life, his long career in the Corps of Engineers, and his activities after he retired from the Army. Like all oral history interviews, this transcript contains General Morris' personal thoughts and perspectives. His views do not necessarily reflect those of the Department of Defense or the Army Corps of Engineers. The strength of oral history is that it captures the unique perspectives and interpretations of individuals who witnessed or participated in historical events. Oral history can supplement and enrich the official record but never replace it. Interviews are often not objective nor are they expected to be. Their value is contained in the personal perspective they provide.

General Morris and I taped the bulk of the interview in 13 sessions during 1993.¹ We discussed the subjects of each session prior to taping it and worked from a rough and constantly evolving outline. After the tapes were transcribed, General Morris edited the transcripts carefully and conscientiously. I assisted General Morris in his review of the transcripts, prepared the front matter for this publication, and chose the photographs from General Morris' personal photograph collection. The Office of History thanks General Morris for the time and energy he devoted to this project, which was certainly more time consuming and lengthy than he anticipated.

¹The interview sessions took place in General Morris' office in Arlington, Virginia, on 5, 11, 19, and 25 January, 8 February, 1 March, 5, 12, and 15 April, 6, 10, 17, and 20 December 1993 and 18 April 1995. General Morris also recorded one session with Dr. Paul K. Walker, Chief, Office of History, Headquarters, U.S. Army Corps of Engineers, on 29 November 1984. The original tapes and unedited transcripts are in the Research Collections, Office of History, in Alexandria, Virginia.

Career Summary

Student, Engineer School, Fort Belvoir, Virginia	Jun 43	Oct 43
3d Engineer Aviation Unit Training Center, MacDill Field, Florida	Oct 43	Jan 44
Platoon Commander, 1895th Engineer Aviation Battalion, Florida, Hawaii, and Guam	Jan 44	Dec 44
Company Commander, 1869th Engineer Aviation Battalion, Florida and Pacific Ocean Areas	Feb 45	Sep 45
Staff Officer, U.S. Army Strategic Air Force, Guam, and U.S. Army Pacific Air Command, Manila	Sep 45	Mar 46
Staff Officer, Engineer Section, Far East Air Force, Tokyo	Mar 46	May 47
Student, University of Iowa	Jun 47	Jul 48
Student, Engineer Officer Advanced Course, Fort Belvoir, Virginia	Jul 48	Sep 49
Staff Officer, Engineer School, European Command, Murnau, West Germany	Sep 49	Oct 52
Executive Officer and Assistant District Engineer, Savannah Engineer District, Georgia	Oct 52	Aug 54
Student, Command and General Staff College, Fort Leavenworth, Kansas	Aug 54	Aug 55
Area Engineer, Goose Bay Area Office, East Ocean District	Sep 55	Apr 57
Branch Chief and Executive Officer, Military Personnel Division, Office of the Chief of Engineers	Jun 57	Jun 60
Battalion Commander, 8th Engineer Battalion, 1st Cavalry Division, South Korea	Aug 60	Jun 61
Student, Army War College, Carlisle Barracks, Pennsylvania	Aug 61	Jun 62
District Engineer, Tulsa Engineer District, Oklahoma	Jun 62	Jun 65
Regimental Tactical Officer and Deputy Commandant, U.S. Military Academy, West Point, New York	Jun 65	Nov 67

Engineer Memoirs

Deputy Chief, Legislative Liaison, Office of the Secretary of the Army	Nov 67	Apr 69
Commanding General, 18th Engineer Brigade, U.S. Military Assistance Command, Vietnam	Apr 69	Jun 70
Division Engineer, Missouri River Division, U.S. Army Corps of Engineers	Jun 70	Apr 72
Director of Civil Works, Office of the Chief of Engineers	Apr 72	Aug 75
Deputy Chief of Engineers	Aug 75	Jul 76
Chief of Engineers	Jul 76	Sep 80

Promotion History

Promotions	Temporary	Permanent
2d Lieutenant		1 Jun 43
1st Lieutenant	1 Dec 43	25 Jun 46
Captain	6 Jun 45	10 Feb 49
Major	13 Jun 51	20 Mar 57
Lieutenant Colonel	18 Aug 53	2 Jan 64
Colonel	5 Sep 61	3 Jun 68
Brigadier General	1 Aug 69	26 Aug 71
Major General	1 Jul 71	28 Jun 73
Lieutenant General	1 Jul 76	

Education

U.S. Military Academy, West Point, New York	1940–Jun 1943
University of Iowa (M.S. in Civil Engineering)	1947–1948
U.S. Army Command and General Staff College	1954–1955
U.S. Army War College	1961–1962
University of Pittsburgh	1967

Decorations

Distinguished Service Medal

Legion of Merit with 3 Oak Leaf Clusters

Bronze Star Medal

Air Medals

Army Commendation Medal with 2 Oak Leaf Clusters

Army General Staff Identification Badge

Engineer Memoirs

LIEUTENANT GENERAL JOHN W. MORRIS

U.S.A. Retired



Lieutenant General John W. Morris

Engineer Memoirs Lieutenant General John W. Morris

Childhood and West Point Years

Q: I would like to start out by asking you a little bit about your early life. You are a native of Princess Anne, Maryland. Was your family originally from that area?

A: My mother's family and my father's family are among the original families over in Tidewater. Both came there in the mid-1600s. My mother's family was Tilghman and is well known in Tidewater. In fact, one of our relatives was Colonel Tench Tilghman, who was Adjutant General for George Washington. My mother's family moved from the lower part—possibly the Eastern Shore of Virginia—up into Worcester County, Maryland, near Berlin and Snow Hill. My father's family was from a similar area, and they migrated northward into Somerset County. Incidentally, Somerset County at one time included Worcester County. My father's family settled near the family home where I was born.

Over the years several in the family were military types. In the Civil War my family was predominantly Southern; my great grandfather died as the result of being imprisoned by Union troops. The Eastern shore of Maryland supported the Confederacy. Constants in my background include the area, the family roots, and a small-town atmosphere. Few people ever left. They all stayed and lived and died there. They regenerated themselves. There were not that many families to start. Most of the people there now are probably relatives, so to speak.

The Morris family was mercantile. They were not among the elite by any sense of the word, yet they were comfortable.

Q: How about your father? What was his occupation?

A: His father, my grandfather, owned a clothing store—John W. Morris and Sons. There were three sons. Before he died one son had moved to California and the other two then opened up their own separate mercantile businesses. My father later bought a theater and was in the theater and clothing business when the Depression of 1929 almost wiped him out. He held on, barely. In 1934 he was appointed postmaster in Princess Anne. He was a strong Democrat and a county leader in the Democratic Party, so Franklin D. Roosevelt made him postmaster. In those days that was a reward for long and faithful service, I guess. He was qualified to be postmaster, too, I don't mean that.

Both my mother and father worked very hard in the theater business. Money for my schooling was hard to come by. I was not a great student in any sense of the word, but I was able to get a scholarship to finish high school at the Charlotte Hall Military Academy on the Western shore of Maryland in Saint Mary's County. I graduated from that high school in 1937 when I was 15, and I needed a lot of growing up to do before I went to college. So I stayed for a post-graduate year in 1938. I worked for my father in 1939.

When the time came to go to college, I received a scholarship to Western Maryland College. Before that I had taken the entrance exam to West Point, but my poor background in English showed up, and I didn't pass. So I went to Western Maryland College and was fortunate enough to get another appointment as a first alternate. I took the entrance exam again and passed. The man before me failed, and I entered West Point and ultimately became one of the few members of my family to get a college education.

Q: How long were you actually at Western Maryland? One year?

A: Yes.

Q: I understand that your mother was interested in your going to West Point. Why was that?

A: Well, it seemed that way to me. It's been a long time, of course. I don't think my father was against it, but my mother associated more directly with my day-to-day training than my father.

They were good, strong people. You look back over all the things, and you wonder, well, what was the chemistry that made things work? I'd have to say that I was fortunate to have been born and raised in a small town with good, solid parents. Some credit must go to the Depression, I think, because it imposed an appreciation of things—life, people, responsibility, natural things, et cetera. Princess Anne is in a rather isolated area.

I don't know when or why West Point became attractive to my parents, but I have a feeling that it was my mother who fostered my attendance.

Q: Was the Naval Academy ever a consideration since you were a native of the Eastern Shore?

A: Too close to home! I don't know the reason, really. Many have asked me the same question: Why are you going to West Point?

I was only the second person in my area to go. The other man was Bill Quinn. He became a three-star general. General William [Bill] Quinn is well known and greatly liked in Army circles and filled an important role in World War II. His father and uncle and my father were very close friends. Maybe that had something to do with why I went to West Point.

Q: Were you enthusiastic about going?

A: Yes, when I failed the exam the first time, it became a challenge. I was delighted to go. We were just getting out of the Depression, the war clouds still didn't seem too dark, and the education was most attractive.

The attitude in those days was rather patriotic. My going to West Point was a well-publicized local event. Everybody in the town seemed involved and behind it. A community effort, you might say.

Q: How about brothers and sisters?

A: I have no brothers and sisters. I did have a very close extended family, however. My father's brother had four children, and my mother and father helped raise them because of some family problems. We were all very close.

Q: What kind of interests did you have in high school? Sports? Were you an outdoors man? Maybe your father was—I don't know.

A: My father was an avid baseball fan, and he very much enjoyed horse racing. He was also a baseball manager. The day I was born, he was managing the Princess Anne semi-professional baseball team which was playing for the state championship against Frederick. Frederick won 1-0.

You know, you hear these stories from your parents all your life. That was his thing. He was not an athlete. He was a very smart man, though. Good head on him, good businessman, very compassionate, well liked—extremely well liked—and a generous person.

My mother's family, though, was more of a hands-on kind of a family—farming, well drilling, pump business, mechanical kinds of things. My father's family was strictly a business family,

believing you can do better thinking than you can manually. My mother's family was just the opposite.

In growing up I was very much immersed in horses, Boy Scouts, church, and athletics. I did well in athletics. I was captain of the basketball team in high school and was recognized in high school for athletics.

Being from that part of the world, you're bound to be interested in natural things—outdoor things. That's the way it was. Even during the darkest days of the Depression, people could live fairly well. They didn't need much money because they lived off the land. Your neighbors looked out for you. As long as you had your health, you could probably survive with a minimum amount of money. So I was very much into, I would say, anything to do with outdoors, athletics, that kind of thing.

Q: When you went to West Point, did you have any idea of where you wanted to go in the Army?

A: We knew when we went in that we would be there for four years and have a three-year service obligation afterwards. I didn't go there with the idea of being an engineer. I knew I was going to be in the Army, and that was okay, but I had no idea about a branch.

Q: Did you have any knowledge of the Corps of Engineers from your home area?

A: Yes, a little bit because, being in the Tidewater area, there was quite a bit of drainage activity. I used to see these cars go by with "USED" on them all the time. I couldn't figure out what that was. It was "United States Engineering Department."

Then the other side of the military—well, it wasn't directly military—was the CCC [Civilian Conservation Corps]. I remember that quite well.

The closest I ever came to anything military before Charlotte Hall was playing in the firemen's band. We used to march occasionally.

Q: What courses did you pursue at Western Maryland during that one year?

A: Because I graduated from high school so young, I had taken a high school post-graduate course. Based on placement tests on entering college, I ended up taking mostly all sophomore subjects at Western Maryland. After the sophomore year, I intended making a final decision, but I was leaning towards business because of my family background.

Q: What were some of the things about growing up on the Eastern Shore that you see influencing your life?

A: You know, there are a lot of things you remember. In those very tough days of the early 1930s, people there were quite vigilante-minded. Our little town was quite volatile. Our home wasn't too far from the jail. One night an angry crowd broke into the jail and removed and lynched a prisoner accused of rape. I was 12 and observed parts of the rampage. Things like that do have an impact.

Even now, I think of the Eastern Shore people as being very independent. They're not big on government. They're big on independence. I think it gives you a broader view of humanity and maybe a little more understanding. You grow up making up your own mind, living with your decisions, I guess.

One thing that it helped me with is the ability to get along with people. I think I did learn from growing up over there—how to deal with everyday, average income people, and how to communicate with people. I think that's been a positive thing.

The Morrisises were Episcopalians, so I was raised in that church. In our home, Sunday was truly a day of rest—I was not allowed to play any games, certainly no movies or shopping. Weather permitting, we drove every Sunday after church to my mother's family in Berlin, Maryland, for Sunday dinner. My mother always did the driving.

Even though people are quite independent and self-sufficient, when help was needed everybody helped. As a small-towner, everybody knew what was going on. So you were always responsible for what you did. You couldn't get away with anything. Or, if you did, you had the idea you'd pay for it sooner or later.

So, you know, that may be something you don't get in a large city where, because there are so many people, you're not noticed so much, or most people don't pay attention to you. That wasn't my case. I think that was the background I took to West Point. I was probably a little more mature than most cadets—not because I was older, but because of my experiences. I didn't have any trouble, for example, with the plebe year or "beast barracks." That was all fairly easy for me.

Q: Were you aware of beast barracks before you went?

A: I had heard all the bad things, but they weren't always true. Then when you get in the middle of it, it's a day-by-day operation, and you find you can survive rather comfortably.

You begin to analyze, become conscious of your circumstances, and you adjust to them. I think the most successful cadets—not necessarily academically, but in terms of getting the most from the West Point experience—are those who see West Point for what it is and realize not to take life too seriously in spite of all the pressures.

You need to find some vocation as a vent to your emotions—some athletic or extracurricular activity. Don't get too uptight about anything because you can drive yourself nuts at that place once you begin to worry.

Q: Did you start in the summer of 1940?

A: Yes. I entered the first of July. My father accompanied me to West Point with another man who drove. Dad let me out of the car, and I went in, and that was that. I didn't get home for 18 months. In those days, cadets didn't go home until the second Christmas, which in our case happened to be 1941—Pearl Harbor.

Q: That's right.

A: So they cut Christmas leave in half, to seven days. Then the following summer, which was supposed to be a 60-day vacation, we stayed all but about two weeks, as I recall, at school. We graduated in three years. So our class was under constant pressure, you might say.

Q: How about that December? Do you remember 1941?

A: Oh, very clearly.

Q: What impact did that have on you as a West Point cadet?

A: It made all the difference in the world. Seven December 1941, of course, was a Sunday. It was an event which causes you to remember exactly where you were when it occurred. I had a date that weekend, and we were standing in line outside of the cadet theater when the news of Pearl Harbor reached us. I turned to the young lady who was with me and said, "Well, that's going to change everything up here for a while." Within a week, our Christmas vacation had been curtailed. After the new year [1942] we were told that our class would graduate in June 1943, or one year early.

Q: I didn't realize that you knew that so soon.

A: Yes, and that changed our whole academic curriculum immediately. Major changes were made in the voluntary or the optional portions. We concentrated on the hard-core portions of the educational program.

It became a very tough course. The fact is, I think it had some significant advantages. It wasn't just three years of the same old thing. We learned in three years what normally you'd get in four years—that is, the substantive courses. It put us into a different esprit. We were in a more enthusiastic culture. We couldn't resign, so everybody's purpose in life became a lot more focused. We knew that upon graduation it was off to war, unless the war had ended. So in addition to the program changes, it had a big impact philosophically.

Q: How about some of the specific changes in the program?

A: You mean, because of this?

Q: Yes.

A: Well, the main thing was academics. Many of the officers up there were sent off to war—a lot of the instructors. That meant more civilian instructors, and even the smartest of the class yet to graduate were made instructors. I had several instructors who were first classmen, and they were excellent instructors.

As our academic work program intensified, the athletic program was curtailed to some extent. Not eliminated, just curtailed.

Q: What about training?

A: Military training?

Q: Yes. What kind of training was there?

A: It was modified somewhat. Your branch training became more significant—branch training meaning that training related to the branch you thought you were going to choose. That didn't always mean the one you went into. I took branch training in coast artillery. I ended up going into the engineers—which is another day, another story. Actually, the whole attitude, the whole atmosphere was quite changed. The things that we talked about changed. On the other hand, those items in the military education curriculum which were applicable were retained—like the major campaigns of Napoleon, the Civil War, et cetera. We continued to study those for their value in military history and tactics and to some extent military engineering, but we didn't spend as much time on those things which could be learned elsewhere later.

Q: What about weapons?

A: There was not great change in the weapons. There may have been some effort to modernize a few items. I don't recall anything there.

Q: You said that some of the upperclassmen became instructors and were quite good. Do you remember who any of them were?

A: Yes. John Schremp, later an engineer colonel, retired. Henry J. Halsell was an instructor. Gosh, I don't know. There are a whole bunch of them I can think of that did teach. Many became engineer officers later on. The two I mentioned—Halsell and Schremp—were both engineer officers. My only problem now is it's been so long ago, I can't remember all of their names. Sy Coker was another.

Q: Was Jewett one of them?

A: Jewett. Well, he had graduated earlier, in 1940 I believe, and was gone by the time I got to West Point.

Q: He wasn't there as an instructor, as you remember, at that point? He wouldn't have been an upperclass instructor?

A: No, but I knew him later. Colonel Richard L. Jewett became my boss when we were in Germany in the 1950s.

Q: I was just going to ask you about some of your classmates. Who in your class did you become closest with at the time that you were there?

A: Well, let's see. My company classmates as a group, then there was my roommate, Frank [Francis] Dirkes. He was an engineer. He became deputy engineer in Hawaii. While transferring to Savannah he had a heart attack and died. Dutch [Glenn] Ingwersen was an engineer who retired as a deputy division engineer, South Atlantic Division. He was from Iowa and captain of the wrestling team and later my best man and closest friend. Jim Phillips, an artilleryman, was another roommate of mine and remains a close, respected friend.

Then there were those who were killed, and whom I knew well as a cadet. Ned Almond, whose father was a general, Bill Wickham, Johnny Hummell—they were company mates of mine. Over the years Bob Mathe, whom you've probably heard of, and I have become friends.

I knew many classmates as athletes. General [Bernard] Rogers and I were very close throughout our cadet career. We were on the track team together. He was our first captain. Lee Hogan, class president, was also on the track team.

I knew most of the class, but the ones I was closest to would certainly be my roommates and my company mates. Howard Coffman, now in Dallas, later became my deputy in Vietnam.

Q: How about Glasgow?

A: Bill Glasgow was in another company, so I only came to know him well later.

Q: Parfitt?

A: Hal Parfitt, very close friend. Hal was on the track team. Hal and I had almost similar careers, up until the time I became Chief and he went to Panama. He was the first member of our class to make colonel.

Bob Mathe was the first member of our class to make general, regardless of branch. Parfitt got a battlefield promotion in Korea, and he made colonel in 1955 or 1956, 1957 at the latest. He did very well. As it turned out, the class of June 1943 produced many engineer generals—Mathe, Parfitt, Glasgow, [Kenneth] Sawyer, [Charles] Reed to name several.

Q: So the track team was your basic athletic activity?

A: Basketball was high on the list at first. I was doing very well with basketball until in the gym one day, I hit the back end of a long-horse and busted my knee.



Members of the track team at West Point in the spring of 1943. John W. Morris is on the right and Bernard Rogers, later Chief of Staff of the Army, is on the left.

So they sent me down to the track to work it off. By the beginning of the basketball season, I was about well when a young child stepped out in the track directly in front of me, and I stopped quickly and pulled a muscle in the other leg. So I missed the basketball season.

Later in the spring of 1941 I told the trainer that I thought I was okay, and I would like to leave track. He said, "Well, there's a plebe track meet coming up, and I want you to run the 100-yard dash in this meet to see if you are okay. The coach will put you out on the side all by yourself." I won the race, and I set a new plebe record for the 100-yard dash. From then on, I never left the track team. That's how I got on the track squad and had a very successful career in track.

Q: Did you keep up with the basketball?

A: No. You see, outdoor track was in the spring, and basketball season conflicted with winter indoor track. I was doing so well, I just stayed there. I had the fastest quarter mile in the United States in 1943 and won the intercollegiate championships.

Q: That was something you had just started to do?

A: As a kid back home, when I was young, I used to run all the time. I didn't know I could run fast. I would have stayed with the 100 at West Point, but General Rogers was a good sprinter. They

also had a couple of other 100-yard dash people, but they didn't have any quarter-milers. So I ended up running the 220 and the quarter mile. In the 1943 Navy meet, I ran the 100, the 220, the quarter mile and the mile relay. The fellow who won the 100—I ran second—still has the record for the Army–Navy game. I beat him in the 220, set an Academy record. We also set records in the mile relay and the 440 run.

Later, Glen Davis of football fame, after playing nine innings of baseball, joined the track meet and broke the 220 record that I set several years before.

Q: I imagine the people back home were pleased to see the results?

A: Oh, yes, sure. We ran Navy at Annapolis one year, and many came over there to see that. Fortunately I did well, but that was just part of it. I was involved at West Point. I guess I didn't put as much time in academics as maybe I should have. For example, I was a Sunday school teacher and later became superintendent of Sunday schools. Cadets teach Sunday school to dependents—children of the officers and enlisted people. So after two years, I ended up in charge of all the Sunday school teachers. That was a very good experience and a diversion.

I joined other activities which are listed in the yearbook. My idea was, you could kill yourself studying. I had one roommate who was brilliant, Frank Dirkes. He was a star man. I had another roommate who had some troubles—Philips. I was sort of in the middle. I never had many worries about not passing.

I enjoyed cadet life because of diversified activities. That was one of the learning points after I'd gotten up there, trying to figure out how to make life at West Point enjoyable.

Q: In line with what you were saying earlier about what makes the successful cadet, as far as coping with beast barracks and all that, it sounds like that was one way of doing it.

A: Well, it was. Without being smart enough to figure it all out, it was a rather successful arrangement. I ended up getting in the Corps of Engineers—albeit from way down on the list. I was a senior cadet officer on the military side and did well in athletics. I wasn't outstanding in anything except maybe the quarter mile, but I did a lot of other things and seemed to get along pretty well with them.

Q: As the war went on, how did you at the Academy react to it?

A: We were anxious to get out and get in it. We did, incidentally. I managed to make the activities on Guam. Our class had the largest number killed in combat of any class in West Point history, and we were second historically in percentage killed. Our class graduated and went right off to war.

I think my company alone lost 8 out of 32. Practically everybody got into the war. Our class graduated in June of 1943. There were two years of war left, and you could be in combat in six months. Ours was one of the few classes which was provided flight training for those wanting the air corps. About 40 percent of our class entered the air corps on graduation day as qualified pilots. Three had been killed in training exercises while still cadets.

On the other hand, I don't know how much of wanting to get to war was a real and honest emotion or how much of it was invigorated by our environment. You know, it's just hard to envision until it happens. I didn't go to one of the most exotic, hotly contested areas; but it was hot enough for me once I found out what it was all about.

Q: What about your getting into the engineers? You started out, you said, with not much idea what you wanted to do. Then you were interested in the coast artillery.

- A: I really never thought I'd make the Corps of Engineers until the last weeks of my first-class [senior] program. Following an average first year, each following year got significantly better academically.

At the end of the third academic year [January 1943] I was somewhere around 200th in my class of over 500—much too low for the Corps.

I was a fairly good student in sciences, and in the last year they loaded up on the technical stuff. Well, as fate would have it, I improved my position a great deal in the last six months.

- Q: Were you really trying for an engineer commission?

- A: No, I really was not. I wanted to be a good cadet and officer. I would have been satisfied with the artillery or armor. As you recall, I chose artillery branch training.

A couple of days before the branch selection, a professor came to see me and told me my class standing would be quite a bit better than I might have thought and I would probably have a chance to choose engineers. The professor was an engineer and indicated he would like me to go into the engineers.

My roommate, Dirkes, who was so smart, knew all along he was going to be an engineer. He knew from the beginning what he wanted. Phillips thought he would not have a choice. He'd have to take what was left by the time they got to him, but he would have liked artillery. It turned out that Frank got the engineers and Jim got the artillery because his grades had improved also. Frank was working on my situation, and he told me I should probably take the engineers.

- Q: Who was the professor?

- A: I don't remember his name. I could probably find out. He was a major. Nevertheless, I talked to quite a few people and thought I'd rather be a smart artilleryman than a dumb engineer among my peer group. That was the big problem. Finally, I thought, "Okay, I like science. I like math. I've always been interested in building things. So I'm going to do it." When my time came to choose, there were five or six engineers slots left, so I took engineers.

I became a dumb engineer, relatively speaking. Years later, General [Ernie] Graves made a study of the class standing of the West Point engineers who became three-star generals. They were pretty high, except for me—I was an exception to the rule. Graves, of course, is a brilliant man. He had one of the highest academic averages ever achieved at West Point.

I never forgot my weakness in English. I worked hard after I graduated, learning how to write, how to talk, how to read quickly. I think the fact that I was poor in language caused me over the years to become better. I have always been a little bit self-conscious about it, so I have probably worked on it more than most people.

Anyhow, I really was down in the pile. There's no question about that. I think I was 140 in my class of about 516 graduates. Most of the graduates who get to be engineer generals—well, you can go back and look—they're probably all in the top 20 or 30. You probably cannot find another Chief of Engineers as far down the list as I was.

- Q: After you left West Point, did you keep thinking about your standing?

- A: I never thought about it the rest of my life, except on an occasion like this interview.

The other thing, though, after our graduation there were so many people in the Army that a West Pointer was seldom seen. At first I went to a training center at MacDill Field, Florida, the 3d

Engineer Aviation Unit Training Center, and there were several West Pointers there. However, later I was the only regular Army officer, much less West Pointer, in my battalion.

Well, wait a minute. I take that back. We had one regular Army captain who had been promoted after some 20 years of enlisted service. He was a regular officer, so there were two of us, but I was the only West Pointer.

My next battalion did have a West Pointer as exec, a Major Jim Hottenroth.

So, to answer your question, once you leave West Point, class standing is not a factor unless you look at a USMA [U.S. Military Academy] roster. The standing serves a useful purpose at West Point, but it's not a factor in daily life of the Army. We don't ask whether a man is smart or not. You deal with him as you find him. A lot of that has to do with how good you are at listening to people and how good you are at talking to them.

Q: I guess one of the things that led me to ask that was your comment about the other Chiefs of Engineers and where they have stood in their class. What you seem to be saying is that if you choose to look at that, you find that other people don't really think about it much.



*Graduation Picture of Cadet Captain
John W. Morris in 1943.*

A: As a matter of fact, I will say this. I don't believe I ever demonstrated at West Point my actual academic capability. The things I wanted to do well, I did very well, if I worked on it—like electricity, I was eighth or ninth in my class. Law, I was fourth or fifth. I don't know what to make of that, except I think it always gave me a little extra initiative once commissioned to do well because I thought I had to prove something.

Q: You said you were the senior cadet on the military side?

A: No, not *the* senior cadet. I meant to say I was *a* senior cadet.

Q: Oh, okay.

A: I think out of my class, I was about 12 or better in cadet rank. Rogers was number one, always.

Q: Now, you've said some things that indicate why that was true. Do you have any more comments about yourself as a leader?

A: It was probably because I realized at the end of my plebe year that I wasn't going to go far unless I was recognized for something. When you hid your light under a bushel at West Point, it's going to stay there. There's no question about it.

So when that third-class list to corporal did not include me, and I saw the people that were on it, I realized they were well known as athletes and other noticeable activities. So I'd say the thing to do is to get to be known.

I guess I left West Point pretty satisfied with life—but not ready to get married, however.

Q: You mean at graduation time, and that many did?

A: Oh, yes.

Q: Even though they were going off to war?

A: Oh, yes.

Q: That was the last chance?

A: It didn't seem to make a whole lot of difference. I guess the pluses and minuses probably averaged out.

World War II and Early Post-War Assignments

Q: You went into an engineer aviation battalion, is that correct?

A: Yes. I went to a battalion that was segregated. All the soldiers were black; all the officers were white. The second battalion, we had one black officer who was the chaplain.

Q: They were listed on your record as the 1895th and 1869th.

A: The '95th was the first one. It was a good battalion, incidentally—a high-performance battalion—well disciplined, no major problems. Our people came out of the construction industry, and the equipment operators were just splendid in spite of the fact that it was segregated—which in those days was not in spite of anything. That's the way it was. I would have put ours with any battalion, any engineering battalion, really, looking back on it. The operators were versatile—older. I don't know how we would have done on some kind of sophisticated IQ test or something. They were good at their business.

I come back to a little story. I left West Point, and I was sent to [Fort] Belvoir, of course. Everybody went to Belvoir. We won the championship in softball, I remember that. The things you remember and don't remember! Four others and I were all sent to MacDill Field, Florida, to join the 3d Engineer Aviation Unit Training Center. Earlier, while I was at West Point, I had dislocated my shoulder as an instructor in bayonet training. At MacDill Field I was alerted for overseas but was told I couldn't go because of the shoulder. So I went to the hospital and had it fixed. It cost me about a month's time.

I ended up leaving MacDill Field for Dale Mabry Field in Tallahassee where I finished out my battalion training and then moved overseas. We took a troop train across the United States to Fort Lawton, sailed to Hawaii, and moved north up to Kahuka, Oahu. We worked on an existing airfield and built a theater.

Unfortunately the theater burned down just as it was being completed. Since I was in charge of the electrical work, I was sure everybody was going to blame me for it. So I went down the next day and took a picture of the master switch box to prove it was "off."

Finally, they sent us off to Yap on LSTs [landing ships, tanks]. I was then troop quartermaster charged to load five ships—LSTs—one for each line company plus two for headquarters company.

The Yap battle was deferred, so we went into Guam instead. It took us 16 days—turtles swam faster than those LSTs. It was a long trip. At any rate, we got there.

We dropped our front ramp, unloaded all our stuff, went ashore, passed by the 3d Marine Battalion—which had just fought the Battle of Santa Rosa, Mount Santa Rosa—went into our area and started to set up our camp. After a week or so, I was sent out by the battalion commander with a bulldozer, a photographer, and one rifleman to start building North Field—now Anderson Air Force Base, Guam.

We broke the trail into the construction site, unloaded the tractor, knocked down a few gum trees and some other stuff, made a few pictures, loaded the tractor back up, and went back to camp. We didn't return to the airfield for another three weeks or so.

That picture was to show we had started on time. Nevertheless, our mission was to build this airfield and have it finished in six months by the first of February.

I was responsible for quite a few things. Of course, everybody had clearing. I worked the quarry. Then I had the job of putting in the electrical work for the runway lighting system.

In mid-December, I came from work about 5:00 A.M. after I'd been up all night, in a disgusted mood for some reason or another. I remember that Lieutenant Ken West was in the mess and asked me, "What're you so unhappy about? You're going home today." I said, "Don't kid me, today's not the day to play games." It turned out I was going home. There was another Morris on the island who was a battalion commander, but I was the one tapped to rotate.

Q: That would have been 1944?

A: 1944, Christmas, the Battle of the Bulge in Europe. I took all the patches off my shirts—those old Third Air Force patches from MacDill Field. I was sure I wouldn't go again, but I was sent back to MacDill Field. Had to sew all the patches back on. I was also sent right back to Dale Mabry, the same place I'd been before. Lived in the same barracks. We were shipped out and went right back to Guam! That's unbelievable, but that's what happened.

We landed in Guam, and the old battalion was out to meet us. They knew we were coming, and somehow or other, they knew I was with the new battalion. The second battalion was not very good. We had some pretty good officers, but many of the soldiers were poor.

Q: So that was the 1869th?

A: Yes, the night before we left Florida there was a riot in Tallahassee, and one local girl raped. I was troop train commander and had to take two or three of the accused overseas under guard. It was just a bad deal. As soon as we got to Guam, the prisoners had to go home to be tried.

Also, this battalion was not nearly as proficient as the 1895th. This time they didn't have the trained people to call on. Attitudes were bad. It was a tough battalion. The war ended shortly after I got to Guam the second time. I was ordered to the United States Army Strategic Air Force, USASTAF. That was the forerunner of the Strategic Air Command, and I was a charter member.

I was in USASTAF when it was set up in Guam. Another engineer, Colonel [Bob] Tarbox, was out there along with many other engineer friends on the island—Ingwersen, [Jim] Betts, [Bill] Roos.

I stayed with the USASTAF staff several months. Brigadier General Curtis LeMay was commander when I was sent to the Philippines to join the Pacific Air Command, United States Army, headquartered at Fort McKinley under Lieutenant General Ennis Whitehead.

I was in the engineer section. Colonel Walker Milner was the engineer. As a captain, I had the job of inventorying the airfields in the Pacific and making a recommendation on which ones should be kept operational and which ones should be put on standby or abandoned—this was an interesting job. We flew in a B-25, the old Mitchell bomber, twin-tailed, two-engine type used on the raid in Tokyo.

We lost an engine on one recon and had to land in the jungle—stayed up there several days until we were able to get out. We were not in any big trouble, but I've been in more pleasant places.

We inventoried a lot of airfields, made up a list, and recommended those to keep. I was a captain. Today it would take 50 or 60 people to do a staff study and all that. I guess even then it was reviewed pretty carefully.

We weren't in the Philippines very long, but I met my wife-to-be there. She was a flight nurse—and a very lovely nurse, too!

Q: Where?

A: In the Philippines. Fort McKinley, Manila. Then we went up to Tokyo. I had been to Tokyo on temporary duty earlier, right after the war ended. I came back to the Philippines and then to Tokyo again in March of 1945. I stayed in Tokyo about two years. During this time they separated the Air Force, and my command was then called Far East Air Forces.

General [Hugh] Casey was the engineer for [Douglas] MacArthur. David Parker worked for him. I was still with Colonel Milner and the Air Force.

In Tokyo, I was put in charge of repairs and utilities. I had to write the R and U [repairs and utilities] program for the Pacific theater. That was a fairly heady job in those days, including fire protection regulations and so on. I had one civilian, a fellow named Peterson, who was just outstanding—Pete Peterson; and a civilian lady—Marie Hubbard. I had two lieutenants working for me—Fayette L. Worthington and [William V.] McGuinness [Jr.] I think that was it—two lieutenants, Marie Hubbard, Peterson, myself, and a Japanese girl. We wrote the regulations, put the budget together, did the whole thing. I couldn't believe it, and I was still a captain. General Casey gave me a commendation medal, my first award.

Those were the days when the theater commander could promote to major. Jim Hottenroth was the exec. Somehow or other, my recommendation didn't get in until about the 25th or 26th of February. On the 28th, the rule was changed to where all field grade promotions had to be approved by the Department of the Army. My promotion for major didn't go in on time. I finally made major about three years later, but I had dropped behind my peers in that little deal.

The Japanese, even though we had just defeated them in the war, were excellent people to deal with. Neat, clean, and they seemed to respect the Army, the Americans. General MacArthur was doing a magnificent job with the local situation. The American Army lived fairly well in Japan—much better than in the Philippines. I had good quarters; not luxurious, but a private room in a nice building. I traveled quite a bit around the islands because of the fire regulations and maintenance requirements. We had a couple of earthquakes, got caught in the elevator once. I never could get used to the women coming in to clean the toilets while I was in there.

You know, life in Japan was really quite pleasant, and besides, I made contacts with many people who showed up later in my life—Dave Parker, as I mentioned, and Colonel [George] Bixby. Colonel Milner, Hottenroth, of course, and Colonel Vandenberg and Don Eister were there.

Q: Can you tell me a little more about the construction on Guam?

A: We had a Seabee battalion at the time with us. Two battalions built that B-29 airfield, now Anderson Air Force Base. That took the whole battalion, practically. We did a few odds and ends. I put a road in up Mount Santa Rosa, which was quite an expedient engineering feat.

Q: In what sense?

A: There was a signal corps unit on top of this mountain. Because there was only a very circuitous trail to get there, they wanted a new, straight road. I was given the job to build it. The problem was how to get there. There were no maps of the trail, and adequate survey equipment could not be taken from the airfield. So we devised a little system for drawing a map, which turned out quite well. I used a plane table, a straight edge, a compass, and a soldier with a couple of coconuts.

I would orient the plane table with the compass. This enlisted man would count the paces along the line of sight until he had to turn. Then he would put down a coconut and yell out the number of paces. I would then convert the paces to a distance and draw a line from the last point to his new position. I would then realign the plane table over the next coconut and send him off again.

Finally, we got to the camp some 12 miles away. Then we connected point A where we started and point B where we stopped with a straight line and took a final compass reading. I said, "Okay, that's the line we're going to build this road on. Hope it comes out at the camp on the other end!" And it did.

Later, the 1869th, my second battalion, started another field called Northwest Field. It was never finished.

I was still in Guam when the war ended. All the B-29s and P-38s and everything else were dancing around up in the sky, buzzing the airstrip, and other celebration antics.

Q: What was the climate like on Guam?

A: It was nice weather, except when the typhoons came through, and the frogs. There were frogs all over. Of course, the jungle was just full of frogs and rats. You knock down the jungle and all these things run out. Lizards also.

I never saw so many rats in my life as in that jungle. Deer also. The frogs would come out at night onto the warm asphalt roads. You couldn't miss them because there were so many. Guam was a pretty decent place once the war ended. You know, Guam is where Japanese soldiers kept turning up in the jungle years and years later.

Q: What would you say was the greatest engineering challenge in constructing North Field?

A: Well, of course, we built on coral, and I recall excavation by blasting as the toughest on equipment and men. The coral made a good, solid base. We also had problems acquiring grade and aggregates for asphalt plants.

Q: Was Northwest Field—which the second battalion built—very close by?

A: It wasn't far away. I'd say five to ten miles from North Field.

Q: That commendation from Casey, about when was that?

A: I don't want to make too much out of it.

Q: I was just trying to pin down the time.

A: It had to have been in 1945, 1946, 1947. Early 1947 maybe. Yes. I left in 1947 to come home and get married and go to school.

Q: How would you assess General Casey from your experiences there?

A: We were all very impressed with General Casey. I didn't see that much of him, incidentally, except at meetings. I would go to all the meetings as the Air Force engineer liaison with the Army. I was always the junior officer. Most of the others were colonels and generals.



Geraldine King, from Wilmington, North Carolina, as an Army nurse in Tokyo, Japan, in 1946, a year before her marriage to Captain John W. Morris.

Q: Are there any other aspects of the Tokyo assignment that you would like to cover?

A: There are a couple of other points and events in Tokyo which might be of interest before leaving that assignment.

First, I mentioned meeting my wife in the Philippines. Gerry had come to Tokyo several months before I did. When I arrived we renewed our acquaintance, and from the spring of 1946 to her departure for the United States on the 23d of November 1946, we saw a lot of each other and decided we would be married back in the States. We thought about being married in Japan and staying there because it was an excellent time and place to have a family and to be together. The living conditions would have been very attractive, and we had learned the lifestyle and found ourselves very happy in Japan—Tokyo particularly.

However, I had been notified that I could attend graduate school at the University of Iowa in pursuit of a master's degree. That, to me, was important, and so, after discussing it, we decided that the best arrangement would be to be married on my return in the spring of 1947.

The wedding date was set for 12 May, which happened to be the date on which my parents had been married, at Saint John's Church in Wilmington, North Carolina. My departure from Japan was planned for early April, and that would allow me ample time to attend to the preliminary arrangements necessary for the wedding.

Unfortunately, the Texas City disaster occurred, and the servicemen in Japan with

families in Texas City were given priority. My return to the States was delayed indefinitely until those evacuations had been completed. As it happened, I left Japan in late April and began the trip home. In Hawaii we changed aircraft for the last leg into San Francisco. As soon as we landed in San Francisco, our whole crew and passengers were put in quarantine because there had been evidence that a rat had gotten into the baggage on the leg from Tokyo to Hawaii. That took two more days.

So time was getting very short, and transportation from the West Coast to the East Coast was spotty, so I ended up hitchhiking by air from Travis Field near San Francisco to Craig Field in Alabama in a twin-engine C-45 aircraft, unpressurized. Having arrived in Craig, I had to get to Washington, which took an extra day. Finally, I was able to get my feet on the ground in my home in Princess Anne, Maryland, and begin to make the arrangements to get to North Carolina, which I did immediately, around the 3d or 4th of May. So, thanks to Gerry's hard work and good planning, the wedding came off on schedule. However, there was a period of some concern when our invitations, having already been sent out, might have to be changed.

Shortly after our marriage we headed west in a 1947 Ford sedan, which my father had won in a raffle. My orders said I'd report to Fifth Army Headquarters. Being as naive as I was in the peacetime Army, we drove to the Fifth Army Headquarters in Chicago, which turned out to be unnecessary, but we were soon on our way to Iowa. Our classmate and best man, Dutch Ingwersen, had already arranged an apartment for us to rent, and I do remember that the rent took \$100 out of a base pay of \$193 a month. We started our married life and an academic career in Iowa City. Also, we soon found out we were going to become parents.

I also was asked if I would be interested in competing in the 1948 Olympics in London, based on my track successes at the Military Academy. Having not participated seriously since graduation, or five years approximately, and also the burdens of trying to acquire a master's degree at the University of Iowa, combined with prospective parenthood, I decided to pass up this opportunity. I've reflected on it from time to time and have never been concerned that I made the wrong decision.

The year was successful in several ways. Our daughter Susan arrived in February, and we graduated in June. Having gone through West Point in three years instead of four because of the war, the University of Iowa powers-that-be decided that those of us in our class of 15 Army personnel who had only had three years of undergraduate studies were not qualified to get a master's degree, even though we had completed the course in good order and competed quite successfully with our peers, both in and out of the Army.

It was a very competitive group. The Army people included Colonels J.C.H. Lee, Jr., Bill Van Allen, Ed Jennings, nine classmates from the Military Academy, and Art Grace [January 1943]. We were all quite high in the order of graduates of the course in civil engineering. The University of Iowa ultimately decided to award master's degrees to those of us who had only three years of undergraduate work after evaluating the courses of instruction that we had taken during our three years at the Military Academy.

Q: Why did you choose Iowa?

A: I didn't choose Iowa.

Q: You didn't choose Iowa?

- A: I had applied for an electrical engineering degree at Rensselaer and two other universities. Iowa was not one of them; however, in its wisdom, the Army selected Iowa, which turned out to be precisely the right place to send me.

While the master's degree was in civil engineering, the course was oriented towards water resources—sewage, water supply, hydraulics, hydrology, and similar courses which involved the work in the Corps' civil works program. We had a very good structural course that evaluated the design of dams, but to do that we had to know how to determine the reservoir capacity, runoff, and all those things. So Iowa turned out to be—from my standpoint—an excellent choice. I would use my studies at Iowa over and over again in the years ahead.

- Q: Did most of your classmates and most of the engineers of your level, if not all of them, go back for a master's degree? Was that pretty common?

- A: Yes. The policy in the Corps of Engineers then was for those regular officers who would remain in the Army after World War II to have graduate-level education. That policy became quite clear to me later when General [Emerson] Itschner was Chief of Engineers and I was assigned to the personnel assignment business. His idea was that every regular Army officer would have a graduate-level degree. It would be in a basic engineering field unless he had a strong bachelor's degree in engineering, and then he could take another subject, such as industrial engineering, but he would get a graduate degree, master's degree.

- Q: That's a policy that begins to change a little bit by the 1960s?

- A: Yes, we can get into this later because, as mentioned, one of my later assignments I served in the Career Management Division. In those days the officers belonged to the Chief of Engineers.

- Q: Right.

- A: When that changed, the Army policy was considerably softer than that which the Corps of Engineers had managed under its own assignment centers, but we'll get to that.

- Q: You talked about the fact that you'd had a short course at West Point. Looking at your classmates or civilians there, how well prepared do you think West Point had made you for this advanced degree?

- A: Well, that's interesting—first off, you must keep in mind that our class and other classes who went into the war out of West Point had a unique maturation period, which does not occur in peacetime. We all came back from the war having decided not to leave the Army, having decided to make it a career, having gone through the war. Even though it'd only been five years since we'd graduated, we as a group, I think, had had experiences that made us appreciate the importance of preparing ourselves for a peacetime military life. I believe our attitude was a little different than that of someone who had not had those experiences.

Our 15 were all in the top 20 of the entire graduate college of engineering. Even if we weren't necessarily the smartest 15 or 20, our conscientiousness to do well was stronger.

- Q: So Iowa was a pretty busy year—lots of studying and the new family.

- A: Yes, it was a very busy year. It was a nice year, though, because our fellow students and families remain today as our dearest friends. The engineers, of course, are a fairly close family anyhow, and certainly our classmates were close. I mentioned a few earlier. Besides Gerry and me, the class of June 1943 at Iowa included my roommate at West Point, Frank Dirkes, and wife June, our best man and bachelor Dutch Ingwersen, and Jim Betts, who married Bonnie and named our daughter Susan. In addition, Dwayne and Harriet Terry, Trev and Helen Sawyer, Howard and

Carolyn Coffman, John and Wanda Bell, and Bill and Miriam Roos made a fine class. Many were newly married. The Roos, Bells, and Morrisses started their families at Iowa. We were all kind of strapped financially, but we enjoyed each other. Our friends were our recreation, and the University of Iowa was a very decent place to be. There was no crime, and the student body was friendly and open, you know, and it was a good, Big Ten school with good athletic programs. So 1947–48 stands out as one of the best years that we had.

Of course, all the circumstances for making a good year were present. We did work hard—we didn't have a whole lot else to do except work I suppose—but it was productive, and all of us recognized that our effort would be rewarded by knowledge.

Iowa had an ROTC [Reserve Officer Training Corps] group. Colonel [William W.] Jenna was the ROTC unit commander. He and Colonel Frank Skidmore, an active-duty engineer colonel there for advanced work, were helpful to all of the engineer students. They taught our families, and the new wives especially, a lot about the Army and its customs. Gerry had a small advantage simply because she'd been in the Army herself.

Q: Let me go back for just a second. You were married in North Carolina. Is your wife's family from North Carolina?

A: Yes. That's my wife's home. I mentioned earlier the best man at the wedding was Dutch Ingwersen. We were commissioned from West Point in class standing order. We sat together and became special friends. We were together all during the war, and when I was married he came to Wilmington, North Carolina, from his home in Clinton, Iowa, to be our best man. A high school friend had become a priest and helped perform the ceremony. The Morris clan came down en masse and practically tore up the Cape Fear Hotel during the bachelor party and with the other festivities. My wife's home has become our second home. We have property down there.

Q: So she was a nurse?

A: Yes, Gerry graduated from James Walker Memorial Hospital in Wilmington. She married a lieutenant in the Air Force who went to Italy, earned a Silver Star in that theater, and was killed. As a result of those events, she decided that she would join the Army as a nurse and managed to get into the flight nurse program. She spent most of her time in the States training to fly and take care of patients in the air and so forth. In early 1945 her unit of nurses moved to the Philippines to handle the casualties from the invasion of Tokyo, which didn't happen, of course, but that's why they were sent to Fort McKinley. I was stationed there. General Whitehead, the commanding general, had a reception for these young ladies and invited some of the bachelor men who were available. I was one of those people, and as the evening went on Gerry gravitated to Jim Betts, a friend of mine, and joined our table. That's how the whole thing began.

So she was a nurse and a very good one. From Tachikawa, 25 miles from Tokyo, she flew to Kimpoo Air Base in Korea to evacuate sick servicemen. While her base was at Tachikawa, on her off days she would stay at Army Hall, an officers billet in Tokyo. The females lived on the top and the men on the first three floors. I was on the first floor. The place was very well managed and proved to me that men and women could live in the same barracks with no problem. In any event, I found the arrangement very nice since we could be together for meals and free time.

Q: You said you were well received by the civilian students at Iowa. Their experience had probably been somewhat similar to yours. They were probably veterans going back to school?

A: Some of them were, yes.

Q: There was a real community there?

A: The younger students were not. Among the graduate students, we did have some veterans. Some of our professors had been involved in the military, not necessarily the war, but the Army students were a cohesive unit. There was no other group like our group. There may have been individuals and there certainly were some very fine people, but we became very competitive within ourselves. They only gave us three A's per course. Our group was graded on a curve, and if you got a C, you had to get an A if you wanted a B average. That happened to me in fluid mechanics. It was a summer make-up course. Well, then I felt that I had to get an A. I had to compete with these smart guys, like Van Allen and Jennings and Lee, to get my A. Well, I managed—I got a couple.

Q: Pretty stiff competition.

A: Very stiff, but it was a challenge and brought out the best. Also a lot of fun.

Q: So you finished up your studies there in July, the summer of 1948, at Iowa?

A: Yes, June, and from there we were sent directly to the Engineer Officers Advanced Course at Fort Belvoir.

As a captain I couldn't get quarters at Fort Belvoir when I reported to the advanced course. Gerry and I could not find a place to rent because the post-World War II housing situation was still very critical. Finally, as did most of our group, we bought a house in Alexandria, off of Route 1.

It was a real shoe box, about 900 square feet, and we paid \$7,500 for it. I borrowed \$500 from my father for the down payment. The thing had no heating system. Whoever had lived in there had sold the heating system; the house was a mess. Looking back on it, I'm a bit ashamed of putting my family in it, but we had many friends who would come over on weekends and help fix up this house. I had an uncle who was in the heating and plumbing business, so he put in the heating system for me. I sold it in April 1949 once our overseas orders were announced and made a little money on it.

There were several students in our area so we had car pools, and the girls could get together and work out their transportation problems. The house we had has been torn down and replaced by a 7-Eleven.

The advanced course was a required course to prepare captains to become company commanders. I'd already been a company commander, as had almost everybody else in the class that I know of. Having just come from graduate school, our study habits were good, so we really had a very easy and interesting year because it was a different subject.

The most interesting event that particular year was the blizzard of 1949, which created "Operation Snowbound." Major General Lewis A. Pick was the Missouri River Division engineer in Omaha, and President [Harry] Truman asked him if he could help relieve the suffering of both people and livestock.

General Pick agreed, and I was one of 10 or 15 officers pulled out of the advanced course in Belvoir and sent to Omaha, Nebraska, to assist in relieving the blizzard problems. We arrived at General Pick's office about 3 o'clock in the morning. He came in, half asleep I think, but very sure of what he was going to do. He sat us all down around the table, and in front of each of us was a purchase order book, a set of car keys, and a map.

He said, "Now, the map tells you where you're going, the car keys will get you there, and that little coupon book allows you to buy whatever you need to do your job. So, as soon as this meeting's over, I want you all to take off, and I don't want to hear any more from you unless you've got a serious problem that you just can't handle. I don't think any of you are going to have any problems like that"—or words to that effect.

I went to North Platte. I stayed at the Pawnee Hotel. We spent about ten days, two weeks, delivering food to cattle. People were okay in general. The cattle, though, were in terrible shape because the ground was frozen and there was nothing to eat. The stubs of the grass or wheat that had been harvested were all they could get, and they'd paw into this crusty ice to get to food. It was actually frozen so hard they'd break their hooves. It was very sad. One family had a prize bull they'd just paid \$3,000 or \$4,000 for, and they had to destroy it.

We opened up a lot of roads, took food in to the livestock. The Air Force dropped hay out of the airplanes. Everybody remembers that. They probably hit more cows—killed more cows with hay—than they fed, but nevertheless it was a good public relations effort.

I was assigned to a Major "Moon" Mullins. Clyde Ernest, a classmate, was also in the area. While I was there we got a call that a lady was having a baby out in a remote area. She just couldn't drive out, so we sent a helicopter and brought her to the hospital. That was my first real association with a helicopter, and also my first Medivac. That became a sensational item in the local paper.

Next, I received orders to Fargo, North Dakota. The problem in North Dakota was the opposite from Nebraska. The cattle were okay in North Dakota because they'd brought them in instead of ranging on the prairie. The people had had so much snow and ground blizzards that they couldn't get to town to get food. So our job there was to open up roads and let the people out. Arriving in Fargo, I was told I was going to go to Bowbells, North Dakota. Bowbells is a little community 12 miles south of the Canadian line. It's the county seat of Divide County, as I recall. The nearest town to it of any size was Kenmore.

I was sent up there in an Army L-4, a single-engine observation plane with skis. The pilot got as far as Kenmore, but the wind was blowing so hard he could not go farther and said he could either let me out or take me back. I said, "Let me out. I'm halfway." He landed, and when he did, one ski broke through the snow and flipped the plane over. Didn't hurt anybody or the plane, especially. I got out with all my baggage and parka and really had no idea where I was except on the map.

Finally, some fellow with a Piper Cub, a red Piper Cub, came up, and he said, "Where are you going, Captain?"

I said, "I'm trying to get to Bowbells."

He said, "I'll take you."

I said, "Are you sure you can get up there? This guy couldn't get there."

"Well, my plane's better; I know the area. I know how to fly in this weather."

So away we went. We got up to Bowbells, and he landed in a field right outside the county courthouse. The field was crusted over, and the wind was blowing—it must have been 50, 60 miles an hour. I got out of the plane. Every time I'd put my foot down with my bag on that side, I'd break through the snow, and I'd go up to over my knees in the snow. I soon learned to shove this bag across the ice and walk behind it.

When the plane took off it didn't appear to move ten feet. He just sort of got up off the ground. The wind was blowing so hard he became airborne, and his problem then was getting turned to go home. Well, he finally got the plane turned, and that Cub looked like a jet taking off with the wind behind it.

Finally, I arrived at the courthouse steps. I was totally exhausted and dripping wet. I sat down on the county courthouse steps to catch my breath, and out came one of the commissioners. He asked

me who I was, and I told him. He said, "You're in bad shape, Captain," and seemed to say, "Don't tell me you've come up here to save us." But that was true. I stayed there 14 days in Room 4 of the Bowbells Hotel.

Heavy construction equipment from the Minnesota and North Dakota areas had been told just to start towards Kenmore and Bowbells. As they traveled they opened the major roads. They arrived in Bowbells shortly after I did. By that time we had a game plan of what we were going to do, and using the radio the people were told when we were going to open Route so-and-so and that they would have 24 hours to get groceries, et cetera. Plowed roads were like double snow fences, and snow would soon blow into the cavities. Keeping the roads open was a real problem, so we would only promise 24 hours on any segment.

We ran a recon one day of Route 25, and we had traveled quite some distance to the far end so we could work back towards Bowbells. As we'd drive along Route 25, little fingers of drifting snow would get thicker and thicker and thicker until finally our vehicle just couldn't get through any more and we were stuck—fortunately right in front of a farmhouse. The people were very nice, but it was embarrassing, though, because I had to call back to Bowbells to get a crew to come and get us. The crew came, and a couple of hours later we were back into town, a bit smarter.

We were so tired at night it didn't make any difference that there was little activity in Bowbells. The tractor operators had canvas hood covers over the engines and up around themselves so only their heads would be in the open. They'd be very warm in there, so they were okay. We never shut down the tractors if we could avoid it because it was hard to get them started. That was an interesting job which helped a great deal during later duties, especially in Labrador.

Once Divide County was cleaned up, we were told to go west to Columbus, Burke County, and so forth. After that we were brought back to Fort Belvoir.

The unfortunate part of this whole event was that nobody told us when we left Fort Belvoir what was going to happen, and I could not tell my wife anything of significance. I would remember that later.

Germany, Savannah, and Fort Leavenworth

Q: Where did you go after your Fort Belvoir assignment?

A: We received orders to Germany. On the trip over Gerry and I couldn't share a stateroom. Majors could have a stateroom but captains couldn't. I was still paying a little penalty for my friend's going off on holiday back in Tokyo, but nevertheless we had a pleasant trip over. She was upstairs with Susan in a very nice cabin. I stayed in a sort of ward area with the men. We had no problem. We could see each other during the day. On our trip was Major "Jug" Young, Crawford Young, a classmate.

Just the day before we landed, Jug got his orders to Hanau. He was very happy. Then my orders came and we were going to go to Murnau—the Engineer School. Our old Ford had not arrived when we landed in Bremerhaven, so we went to Murnau on the train. The track was smooth and we had a good night on the train.

In 1949 Murnau, Germany, was not a big city. We were met by someone from the Engineer School and taken to the colonel's home, Colonel S. A. Armogida, for our first night. He had a great house. Our second night was in our assigned house at the end of a dark street with no lights, on the fringes of Murnau. The house was sitting on a hill looking out over the moors towards the

Alps. Right next to us was a tavern, so a few beers and the Alps prompted some gusty yodeling. That was our first night alone in Germany.

Our commander, Colonel Armogida, made a significant difference in my future. As our officers often said, "He was the commandingest commander." He ran the Engineer School based on very high standards. Just wouldn't put up with promiscuity or laxity, which were not uncommon in Germany at that time.

The Engineer School job would be my first three-year fixed assignment. I would be observed over a long period of time in the same location.

After a few months we moved to an excellent house. We made many friends in Murnau. A few we'd known before but, by and large, it was a whole new community. I began duties as the supply officer. I had no idea I'd ever be a supply officer. I thought if I was going to be anything I'd be one of the training officers, but the commander needed a supply officer and I got the job. In summer of 1950 I became the S-4 and was responsible for all supply and maintenance. In June 1951 I was promoted to major.

As the supply officer I learned that there was a tremendous amount of excess property left as the German families moved out and the problem worsened as American-purchased furniture arrived. We had it all on inventory and had to keep all these records. Besides, we had numerous real fire hazards.

When I became S-4 we decided to get rid of this stuff. That was a big program. We had to locate the owners, explain what we wanted to do, and offer them any furniture they wanted and could pick up. We set up a day to do all this and actually returned tons of furniture to their owners. Our program became a good example.

The S-4 had broad duties—too broad probably. He would prepare the budget, get it approved, and draft the plans and specifications for projects. Next, the S-4 would send the projects to the contractors, receive the bids, select the low bidder, award the contract, then supervise the construction. The S-4 oversaw the entire cradle-to-grave process. Colonel Armogida was pleased because we were putting together things that he'd been trying to get done.

One day just before he was to leave for a new assignment he gave me a nice compliment and encouraged me to stay in the Army because he thought I had a good future. I never paid much attention to that at the time, but his thoughts came back to reality later. Anyhow, we finished up our tour as S-4 and then I was brought back to the States.

Q: How did your family adapt to living in Germany?

A: In many ways that tour gave us the outstanding three years in our military career as a family. We developed a good family routine and we had ample time for our family affairs. Wednesday afternoon was off in those days and we played a lot of golf and skied in Garmisch. We traveled to Paris and Rome, et cetera. Our son was born in Munich at the hospital, and as with the first child, I wasn't present. When Susan was born I was home in Iowa City, the nurse called and suggested I not come over till 6:30. I did that, but by that time my wife thought I was a little late coming. In Germany it was even worse. I was in Murnau; she was in Munich at the hospital when John was delivered by a doctor named C.T. Daniels.

I wanted to name him after my father, but Gerry named our son for me. I am John W. Morris II after my grandfather John W. Morris. Our family custom was to name sons after grandfathers, but she changed that summarily.



Captain John W. Morris and Gerry Morris vacationed in Garmisch, West Germany, while Morris was assigned to the European Command Engineer School in Murnau.

al. Colonel Jewett was a troop commander. He exemplified the military. Armogida was a different kind of leader—very strong, but he was interested in product, results, and while a strict disciplinarian, he was not “military.”

- Q: The Engineer School at Murnau. That’s unusual for an overseas command to have its own engineer school, isn’t it?
- A: Many of the services had schools in Europe in those days. The Engineer School served a very useful purpose. Keep in mind, the war had not been over all that long, and Korea had started. There was quite a bit of tension and keeping the troops in Europe combat-ready was of substantive value. Our subjects included demolitions, bridging, fortifications, et cetera.

As S-4 I had to support certain clandestine activities. I’d get a call in the middle of the night to do this or that, and I’d have to take care of it. My wife would ask, “Where are you going?” I’d say, “Well, I can’t tell you.” The activity trained refugees out of Eastern Europe and dropped people behind the borders to learn what was going on.

Also, as S-4 I was responsible for the evacuation plan of all the dependents. We stored water, paper towels, toilet paper, rations—all the things needed if there had to be an evacuation. The

My associate in S-4, Mr. Willard Fritzinger, raised Italian greyhounds and we got a dog; his name was Carlos. We called him Charles and had him for 15 years. He grew up with our kids. We had a housekeeper, a Czechoslovakian refugee, who took care of the children. I finally got rid of that Ford and my captain’s bars about the same time. I ordered a Riley made in England, a nice automobile. We brought it back to the States.

We had parties at the Schloss, a three-story officers’ club. A local landowner had a large estate and this building was used as our club and transient and bachelor officers’ billets. We had a women’s billet which was very unsatisfactory, so based on my experience in Tokyo I decided to put the men on one floor and the women on another. There was a lot of hullabaloo about that. Interestingly, the men began wearing neckties and jackets—it improved the appearance, at least, of the officers. We never had any trouble.

Being S-4 turned out to be a substantive assignment in later years. Working for Armogida was important. He was replaced by Colonel Dick Jewett, Richard L. Jewett, who became a gener-

evacuees were to pick up a packet in their car and follow preselected routes into France. We had to practice that. There were a variety of things going on that kept us in some state of readiness, and the Engineer School was particularly important.

The Engineer School in Europe presented a very nice curriculum patterned after Fort Belvoir. I don't think it was unusual at that time to have schools. I'm not clear on where all the other schools were but I know the Intelligence School was at Oberamergau.

Q: Was the school responsible to the theater engineer?

A: Yes. The school commandant reported to the Engineer, U.S. Army, Europe, in those days. He was at Heidelberg, and that's where we'd take the budget. I had to go to Heidelberg frequently on business.

Q: You were there during a period of pretty dramatic change in Germany in terms of rebuilding after the war, I guess.

A: Yes.

Q: From 1949 to 1952, you saw a lot of changes over those three years.

A: Well, yes, that's interesting because when we were in Japan, by now five years earlier, Japan had done more clean up in 1947 when I left there, it looked to me like, than the Germans had done in 1949 when we got to Germany or even when I left.

Q: That's interesting.

A: The Japanese, though, went about their clean-up operations on a national basis. Every individual picked up pieces of tin, brick, et cetera. They'd stack it all up by the various categories of material and it would get hauled away on bicycles and coal-burning trucks and everything else. They had done quite a job of putting things in order in Japan quickly. In Europe I didn't feel that they'd been quite as aggressive in that.

We saw a lot of other changes in Germany. For example, when we arrived—they were using the reichmark, which was the old German money. There was so much black market going on that they converted that to the deutschmark and gave us scrip, which was at that time pegged about four to one, \$4.20 in DM scrip to \$1 in U.S., I think it was.

Of course, the Army was integrated in 1950–51. The Engineer School in Murnau had less trouble integrating students than we would have had integrating in the troop units, I expect. I don't know. In Guam I commanded a company of only black soldiers while the officers were white. I thought integration was the right thing to do and it proved out that it could be done, of course.

Q: Did you have German civilians in the school there?

A: As students, no, but my civilian staff as S-4 were all Germans except Fritzinger. Later one other American arrived, a Mr. O'Brien. The Engineer School staff included many Germans. Some of the professors were German. We had two German doctors at our little dispensary and they were quite good. I had firsthand experience when our son fell off and cut his head on the coffee table. They put stitches in him and you can't even see where, they did such a good job.

The school buildings were in bad shape because of the war and neglect, so we did a lot of rehabilitation. The houses were nice, however, and the service facilities were good.

Q: Did you have trouble finding German contractors to do the work?

- A: No. One in particular was always competitive. His name was Burgmeister, but there were usually four or five bidders. We went about it in the right way. I'm going to come back to this a little later.

My tour in Germany was the beginning of our appreciation of the Army—how the Army really operated, the business of supply and command and stability came for the first time in Europe. Also it was such a wonderful place to be. My mother came over and my wife and another friend went to England. My mother said she'd never leave the state of Maryland, but when that grandson was born, she came. We actually met her in Paris and drove home. That was very exciting for us.

Another thing I remember—some things you just remember—the Queen of England's coronation, and the song of the year was "Cry," and then "On Top of Old Smokey." The big party game was charades.

Annual Christmas parties were held at the Schloss. We also had a wedding. Joe Cushing, who lives over here, married the secretary to the commandant. We went one Sunday to visit an old church, Christ Church, over in the valley. It was one of the oldest churches in Europe. We got snowbound, couldn't get out. I walked up to this farmer's house and he came back with two horses and just like out in North Dakota, pulled us out, towed the car behind the horses up to his place. We stayed there until we all got warm and had something to eat and drink. A nice experience. We enjoyed ourselves in Murnau. Still, we worked hard.

- Q: It was during the time that you were there that there was a big build-up of American forces in Korea?

- A: Yes, I thought I was going to Korea. I didn't want to leave my family, but I thought I belonged in Korea. It didn't work out that way.

- Q: Anything else about Murnau?

- A: Yes. Our help. Charlotta Egg-Lotti was our "hausfrau." She became a real member of our family. She loved our son John dearly, and I remember the day we left Germany like it was yesterday. I can still see her standing there, tears running down her face, waving goodbye to John. We tried to get her to come home with us but she was afraid to come. She was afraid the Indians would get her. That's true. She said, "Oh, Mrs. Morris, I'm afraid of the Indians." That's what motion pictures did, I guess.

Our other helper was a refugee named Panec. A baker by trade, but he was hired as a yard man. He took care of two or three houses. On Saturday he would come to our kitchen and bake cakes and cookies, and it was awful. Awfully good. His problem was he was used to making quantities, not small amounts.

Also, a local farmer would come in and cut the grass. He had a couple of cows that pulled this wagon, and he and the son had the scythes and the daughter would hold the animals till he had cut our grass. He'd rake it up in piles, and then she'd move these animals to each of these piles and they'd throw the hay on the wagon and they'd go away. They'd do that about three times during the summer.

Germany was a nice experience, but we finally received orders to Savannah, Georgia, to be deputy district engineer. I was beginning to wonder, by this time in Germany, where I was really going in the Army. I guess everybody goes through such thoughts. I'd gone through World War II; I had all the education I was to get to that point; I had finished my service obligations; I had a good tour in Europe. I wondered which track I was going to go down. Was I going to get into civil works or was I going to go into strictly troop duty? It was really a watershed period.

Our assignment to Savannah was very favorable. My boss was E. E. [Ellis] Wilhoyt, later General Wilhoyt. His wife, Dolly, and their four girls had a very nice home in Savannah. We moved into a lesser house, a nice, new home, not too far away, and started off our service as the deputy to the district engineer. His boss was originally General "Weary" [Walter K.] Wilson, and then General Charles Holle. Both generals became very important to me later. Wilson was only there a very short while; then Holle came along.

Just before our tour ended, Holle left and Brigadier General Pat Strong took his place. General Strong came in from Japan. I remember two things about him: he was from Savannah, Georgia, and he had written *Jack Armstrong, The All-American Boy*.

The tour in Savannah gave me an insight into a whole different world. We wore civilian clothes much of the time, we lived on the civilian community, and I got a look at the public works program. I found my work at Iowa, the graduate work, to be very applicable. I enjoyed working with the civilian staff. They seemed to enjoy being with Gerry and me. It just was a very enlightening experience. We had a big dredging program; the dredge *Henry Bacon* was there. We were building Clark Hill Dam.

Some outstanding civilians. Mr. Charlie Trainor, who was a technical adviser to the district engineer. Wilhoyt, Trainor, and Morris ran the headquarters. I was the least of the three, that's for sure. Trainor was an outstanding engineer, and he had Fred Facey, Engineering, and "Shorty" Gunn, Construction, under him. Savannah was a professional organization, truly. It was an old district. One of the things I got into was cleaning up the records and other accumulations.

I also became involved in the public hearings. We had to issue permits in those days, too, but we usually did that on Saturday. If we had a permit hearing, we'd schedule it on Saturday, and I would go out as the deputy district engineer and run or help run the hearing. Each would take 10 or 15 minutes or maybe half an hour, and we did maybe one of those a month at the most.

We were very much involved with some very powerful political people in those days: Senator Richard Russell; Strom Thurmond. We were trying to get Hartwell Dam authorized. So the civil works side of the office was quite busy, from the dredging, the maintenance of the waterway, the building of Clark Hill Dam, getting Hartwell authorized, public hearings for permits, et cetera. I mean, it's sort of a mini-Corps of Engineers with all the functions there.

We had a boat, called the *Danora*. The *Danora* had been given to the Army by the Chrysler Corporation in World War II. It was a luxury yacht, about 106 feet long, sleeping capacity for four or six people. General Holle would inspect and we'd usually take him on a little spin in the *Danora*. Mrs. Holle would come along. She was a great bridge player, so they loved to go out on the boat and the ladies would play bridge. One of our lieutenants was Andy Pick, and on one occasion the Chief of Engineers, [Lieutenant] General Lewis A. Pick, came to Savannah. Colonel Wilhoyt had been in the CBI [China-Burma-India Theater] with General Pick in World War II, and I had been in "Operation Snowbound," so there was lots to talk about.

Incidentally, one of the permits we had to hear was a permit for Hilton Head Island. That was rather routinely handled because we didn't think anything would ever come of it.

The military area covered all of Georgia and up into North Carolina. We had real estate responsibility as far north as Wilmington, North Carolina. That was kind of nice because I could go up there with Gerry to her home. Kings Point was just getting started—an ammunition terminal on the Cape Fear River. Savannah District acquired all the real estate for that.

Moody Air Force Base, Turner Air Force Base, Fort McPherson, Fort Benning and Warner Robbins were in our area. I was responsible for safety and some project progress in general, so I did a lot of traveling around.

Mr. Goldberg, the personnel officer, and I were driving back from Atlanta to Savannah one afternoon. When we got to Macon, Georgia, a tornado came through. It was a very serious tornado, and we could see this thing coming and where it went with a deluge of rain. We just missed it by minutes, we were that close. In fact, we even slowed down because we could see the damage that we had to go through.

I remember trying to quit smoking in Savannah, which I didn't do. Mostly I remember driving everywhere. We spent hours in an automobile going to these various bases. I can still remember Rosemary Clooney singing "Hey, There." They played that song about every 20 minutes on the radio.

In Savannah the concerns I had had in Europe on what I was going to do were diminished because I liked the Corps of Engineers' district work, both military and civil. I then decided I'd like to be a district engineer some day. In early summer 1953, Frances Hambrick, the district engineer's secretary, an outstanding individual, not only in her work but also as a very nice person, read each Army regulation that came through as part of her job. One day she read a regulation that said something to the effect that a major if recommended by a general officer could be promoted to lieutenant colonel. She took that order to Wilhoyt, thinking it applied to Major Morris. He agreed and recommended me to General Holle who okayed it. His deputy—a colonel whose name I don't recall—was not in favor because he felt I was not old enough to become a lieutenant colonel, hadn't had enough experience, I suppose. Well, that may have been true, but I had many classmates who were lieutenant colonels already.



Colonel Ellis E. Wilhoyt, District Engineer of the Savannah District, promoted Major Morris to lieutenant colonel in August 1953.

Anyhow, General Holle sent the recommendation to Washington. My old commander, Armogida, was in the Chief's office. When Frances told me the status, I called Colonel Armogida on the phone and explained to him that this paper was on the way. Timing was relatively tight. He said, "Don't worry, I'll keep my eye on it for you." As luck would have it, Armogida personally took it up to General [Sam] Sturgis, then the Chief. He got the Chief of Engineers to sign off. Well, that was it. I mean, that fixed it right there. I didn't need more than the top engineer. I made the list.

Interesting enough, there was another person on that list of some importance. His name was Bernard Rogers, my classmate, who later became Chief of Staff of the Army. The effect of that promotion was significant. I'd only been a major since June 1951 and this list was published in August 1953. Also, I caught up with my peers who had gotten ahead of me during World War II and it put me back where I would have been had the promotion from captain to major not been delayed. So that worked out pretty good.

Of course, an August 1953 date of rank put us behind the 7 July 1951 promotions to lieutenant colonel, which include practically all of the classes of 1940, 1941, and 1942. That didn't bother me too much in 1953. Gerry and Colonel Wilhoit pinned the leaves on me; our children were present. My wife was so enthusiastic about it, she came to Wilmington one weekend and picked out a car for us to buy that cost \$4,500. Now, that may not seem costly today, but in 1953 that was expensive. So anyway, I made lieutenant colonel, thanks to Frances Hambrick's reading those regulations, and I'll never forget her.

Savannah was really an important time. Again I was lucky to work for great people who desired to help individuals who worked for them. I learned a lot from all of them—from Armogida, from Jewett and Wilhoit—all outstanding men who made it easy to be good, really. You couldn't do too badly. They wouldn't let you.

Savannah clarified some objectives for me and it gave me the opportunity to meet some top people who later became very important in the Corps of Engineers. At the time I probably didn't realize how valuable that assignment was.

From there we were assigned to Fort Leavenworth, to Command and General Staff College [C&GSC].

Q: Could I go back for a couple of questions there? You were doing a lot of work for the Air Force during this time period. How was that going?

A: We got along with the Air Force fine. Actually, the Air Force had been a separate service only about five years, and they were getting their turf established, beginning to want to take over their own engineering. The effect of that caused the Corps to do a better job for the Air Force than they might have otherwise.

One of the big issues was housing. We were building Air Force housing every place and the housing was not as good as it should be. Ultimately, the Air Force got its own housing, and one of the reasons, I think, was that the Corps design produced a house which was not all that great. I believe that was the seed that ultimately ended up in the Air Force's doing its own housing and the Army using contractor designs.

Q: Well, you had some big construction on the Army posts. You had Fort Benning and Fort Stewart. In the post-Korean war period, those were big programs.

A: Stewart was an interesting one, now that you mention it, because the Air Force was at Hunter Air Force Base and the Army was out at Fort Stewart, and Stewart was in very bad shape.

We were doing quite a bit of work at Benning. I don't remember the specifics.

I wouldn't want to say that the civil program was any more demanding on the district engineer than the military program. The district engineer would probably say the military program took more of his time, which is not unusual because the civil is an internal operation and had its own management.

Q: I am interested in housing. What about Wherry housing? The Wherry program was in operation at this time?

A: Yes.

Q: Were they trying to build housing too cheaply? Was the program just too cheap in terms of each house?

A: That is true; cost per unit was the dominant factor. The other had something to do with standards. Design factors were an area with which I wasn't intimate at that time so I can only surmise.

Q: Then Wherry. Wherry was a sort of—

A: Cracker box.

Q: Well, on the civil side of the house, I think you mentioned Hartwell and Clark Hill. Was recreation becoming more important?

A: Yes. It was not a project function at that time, but recreation was provided at Clark Hill. Clark Hill was not quite finished when I left, but my recollection is that the reservoir area did include boat ramps, camp sites, et cetera. It was just part of the operational setup. Boating was one of the most attractive features to the local people. The reservoir itself was available for public use, of course.

In those days, we had cabin sites. You could buy or lease land on which to build cabins. The cabins became quite a problem later on. Criteria for these facilities were not very well established, so many were built that probably shouldn't have been. These sites were supposedly far enough from the reservoir area to not affect operations. It turned out some of the surveys were not well done.

Q: Savannah's now become a tourist area with a lot of restoration.

A: Yes. When we were there they started to do the old cotton exchange over, and there were some very nice restaurants in town.

Q: Did you have much interaction with the politicians? You mentioned them earlier as strong ones.

A: The answer to your question is yes. A gentleman named Lester Moody in Augusta, Georgia, was a principal political individual in that part of Georgia. He had the contacts and knew how to do things. He and Senators [Richard] Russell and [Walter] George were very close associates, Colonel Wilhoyt and Mr. Moody communicated often about political matters.

The political people were quite active. There was strong support for Hartwell Dam, now named Richard B. Russell.

As for the local political people, I personally don't recall doing business with them.

Q: Would you say that was a real training ground for you later?

A: It was. That's why I said earlier it was a landmark assignment. By the time I became a district engineer I'd had several other assignments that were also foundation items, but Savannah was the first.

Then we went to Leavenworth for the usual C&GSC tour. Had a lot of West Point classmates in the group. First time I'd gone to school with students who were from other branches. Always before, I'd gone to school with engineers, but this time we had all branches.

The military schools work you pretty hard, but they are a very good change of pace—recreation, in a sense. They give you a chance to put aside the pressures of day-to-day business, to think, and to clear your mind.

It's hard to single out anything, but again classmates and friends—Bernie Rogers and Bob Mathe—we must have had maybe 20 classmates at C&GSC.

Q: Were some of the Iowa people there too?

A: Well, let's see. I don't recall any right now. The ones that come to mind were not of the group that were at Iowa. Miles Wachendorf from Murnau was a student, however. We enjoyed seeing them again.

I don't know what to tell you about Leavenworth. It's just the traditional year. It does give you a lot of exposure with the rest of the Army, not just the engineers, and that was important to me because I had been only with engineers in my career to that point.

Q: Well, this is during the Eisenhower massive retaliation era. I guess a lot of the curriculum must have been devoted to nuclear weapons.

A: Yes, that's true and your question reminds me that President [Dwight] Eisenhower's son John was a classmate at C&GSC. In those days the Army started a nuclear effects course, and those who chose to do so could stay nine weeks longer to complete a special weapons course. I was one of a small group that did. Normally the scenarios were located in Europe using conventional forces. We had a few in the Pacific. We would then have a final exercise on employing nuclear weapons—where and what size and things like that—but that was an addendum to the basic education.

To encapsulate C&GSC, you learn staff work and you learn how to write a five-paragraph staff paper and order. You learn how to utilize the various elements of the military in various war situations, combat situations, and integrate the infantry, the armor, artillery, et cetera. Those exercises stand you in good stead for staff positions. For example, I'll still follow the five paragraph concept; you know, the problem, facts bearing on the problem, et cetera, et cetera.

The other thing, which is not in the course outline, is this relationship with the rest of the Army. You remember your classmates at Leavenworth all your military career. They're important to you all along. It's easier to communicate with people you know, of course. So I think that was a very valuable opportunity.

Besides the regular nine-month course, there was a three-month associate course.

Q: Most of the students there have probably been in World War II or Korea, or both?

A: Yes, I think almost without exception. See, we were all majors or lieutenant colonels, and this was 1954. The war had only been over nine years. You had to have over nine years of service to go to C&GSC. Again, I tried to quit smoking. Again, I didn't make it.

Goose Bay and OCE

Q: Where were you assigned after Fort Leavenworth?

A: Goose Bay, Labrador, however, initially, I was slated to go to Korea as a battalion commander. An engineer officer named Jones was assigned to Goose Bay, Labrador, but he had five or six children, and it was considered a nondependent tour. Colonel Dick Hennessy had come from the Chief's office to give us our assignments. Jones indicated he didn't see how he could go to Labrador and leave his family.

I mentioned to Hennessy that if Jones didn't want to go to Labrador I'd like to go because it was a construction assignment and I would like to be the resident engineer for building an air base in the Arctic. Korea was a nondependent tour, too, as I recall, Jones changed with "Snuffy" [Frank] Rhea, a West Point classmate, on orders to the Philippines. Rhea went to Korea, and Jones went to the Philippines. That's how it all shook out.

I took the Goose Bay assignment thinking I was going to be gone one year. My wife wasn't all that pleased but it was just as well to be there as in Korea. One day I was looking through the Army or the Department of Defense regulations to learn about Goose Bay, Labrador, an Air Force installation. I noticed that Goose Air Base had 40 sets of quarters. So I began to wonder, what would I have to do to get a set of quarters?

My new headquarters was to be Eastern Ocean District in New York City, of the North Atlantic Division. The North Atlantic Division was under [Brigadier] General [Clarence] Renshaw, who had built the Pentagon. His Eastern Ocean District engineer was Colonel Morton Solomon. Colonel Solomon allowed me to go to Goose Bay, Labrador, on a reconnaissance trip out of Fort Leavenworth.

I went to Goose Bay. The base commander was Colonel James Knapp, a West Point graduate and an Air Force pilot. He was well respected and soon to become a general. I went to see him, and while there I asked about quarters. He indicated they were for Air Force people. I asked about the one Army colonel in quarters. He mentioned that Goose Air Base needed him a little longer because he ran the seaport.

I indicated I would be happy to stay two years if I could bring my family. In response, he offered to ask the Chief of Engineers to agree to let me stay two years.

So he contacted General Sturgis, who was the Chief at that time. Ultimately, the assignments people agreed to let us stay at Goose Bay for 24 months if they would give the family a set of quarters. Colonel Knapp gave me quarters as he agreed. I came back to C&GSC and moved the family to North Carolina for two weeks' holiday.

After two or three days in the sun, Colonel Solomon called me and said he wanted me at Goose Bay Monday—this was a Thursday in mid-August. I complained that I just gotten back from Goose Bay and had not had any holiday after C&GSC. He then announced that the officer in place was being relieved and he wanted me up there at once.

So I said, "All right, Sir, but can I just have two more days?" He agreed and gave us until the next Friday. That gave me a week. We packed ourselves and took off for Maguire Air Force Base, the port of departure. Hurricane Diane arrived at the same time, and we didn't get to Goose Bay for two weeks. We stayed at Maguire.

Finally, I flew into Goose Bay with Gerry and the two children. Colonel Charles Duke met us. Charlie was the deputy district engineer, and Solomon had sent him up there to "hold the fort" till I arrived. We climbed off the airplane about 1500. Major Jim Guest, deputy area engineer,

was there also. We went into the coffee shop to wait for the baggage. Guest was to take my family and me to our house. So I asked Colonel Duke if I could go home with my family and meet tomorrow morning to be oriented.

He said, "This is your orientation now. I'm getting on that airplane you got off of and going back to New York. So if you want to ask me some questions, you've got about 20 minutes." [Laughter]

I didn't know what to ask, so I said, "Well, I'll see you, Colonel. Thanks for holding the line. What do you suggest I do?"

He said, "I want you to do one thing: get the damn hospital turned over." That's the project which got this other fellow in trouble. Duke left shortly thereafter. So we all went over to our house and settled in. Our assignment at Goose Bay, another critical assignment, began. This wasn't supposed to be good in a lot of people's minds, but it proved to be outstanding. Lots of reasons.

One, there was limited communications with the district headquarters in New York. I couldn't call on the phone. I could communicate by radio, and that was problematical because of the weather conditions. If I wrote a letter, it took a couple of weeks. Colonel Morton Solomon's philosophy was very simple, "You're out on the end of the line where I can't help you. Just do a good job. I can't afford to have somebody out there that can't do the job."

Turned out that every colonel that survived an assignment to a remote site later became a general. Carroll Dunn, Bill Starnes, Frank Koisch, Dick McConnell, myself. Solomon's track record in developing officers to their full potential was great. He gave you every opportunity to succeed, but he didn't protect you to the point where you couldn't fail. He wrote all his efficiency reports in longhand. Somewhere there's one on me to the effect that with a little more experience I'd be a pretty good officer, and that was about the size of it.

Well, anyhow, there I was at the end of the line, so to speak, and we then proceeded to put in 20 months of the most concentrated, 100 percent effort of any time in my life because of the circumstances. We only had a few months of the year to work outside so we had to spend the whole winter doing inside work, preparing and planning for the next construction season, and then executing it efficiently. Safety was a great problem because of ice, snow, and extreme cold. The Goose Bay program involved placing 18 inches of concrete over the runways, installing a complete automated refueling system, rather sophisticated, a central heating system for the base, 400 new houses, new electric distribution, and much more.

The new electric power plant included two 2,000-kilowatt generators. They had to be tested in the wintertime, and we had no way to test them except by using the base load. General Knapp decided at the last minute it was too big of a risk. He feared that if the new generator broke down, it would damage the old diesel generators, and the flight line would be shut down.

So we had to come up with another way to do it. Interestingly enough, we used a construction camp for the base load. We organized everybody so that at a certain time of a fixed day they'd plug in all their irons, their space heaters, and turn on every piece of electricity they could find. We generated enough demand out of our construction camp that we could test these generators.

That was the one time I got in dangerous straits with Colonel Solomon. I had sent a requirement down to the district telling them of my dilemma when the commanding general had changed his mind on letting us use the base load. The base suggested we build a water rheostat, so I fired down there a letter asking the district for some help on this thing, especially if they have any better ideas. I got this long document back, which some staff person sent me. It didn't say a thing I didn't already know. So I fired back another wire, which I'm sure got to Solomon, that said, "I don't need all this information. I just want a decision." That created a little problem, I think, but it also probably got their attention because I had explained what I was going to do and I wanted

to find out if there was any objection to putting at risk the whole construction program in Goose Bay. We proceeded on our own, alone.

The first thing after we turned on the generator, it blew out one of the fuse boxes. I thought, "Oh, Lord, here we go." Fortunately it was a wiring problem. We hadn't put the generator on line yet, but still I felt we were going to be in one hell of a mess before it was all over. However, we tested them with the construction camp as a load and all worked out just fine.

That was one problem. Trees were another. At Goose Bay you couldn't drive a tractor near a tree because the roots were so close to the surface. General Knapp would not stand to have a tree removed or killed. His point was well taken because the windblown sand up there raised havoc with jet aircraft and caused big maintenance problems. The trees, the tundra, and the moss that grows on top of the ground reduced the sand, so we had to be very careful. Every time we'd knock down a tree I personally had to go see him. I didn't like to go see him.

We had safety problems. A blizzard overloaded the roof on a big warehouse containing the base communications supplies. The base engineer was not well equipped to repair the damage so I suggested to the base commander that he give the Corps the job. We promised to have that warehouse roof back in a couple of days. Then we would figure out what happened and fix it permanently. He agreed and we delivered. Then we got into a big deal about why it failed. The Corps had built these warehouses. It turned out that the maintenance people had not routinely tightened the wood connectors. In time, they had gotten loose, and the heavy wind caused one of the trusses to fail, and then the next bay and so forth.

Then building the airfield; you can only pave with the temperature at 40 degrees and rising. Some days everything was ready, all the trucks and plants working, and it'd be 35 degrees. You'd wait and look for the sun; it wouldn't come. When we could pave you can imagine we were very active because the total annual outside work season was only about 90 days.

Then, in the winter, we had tremendous snows. In 1955-56 220 inches of snow fell from September until June, and the first flake never melted. So the snow removal problem was immense as was land movement. Just getting around was a problem. Still, our children never missed a day of school. They went to the Canadian school. The road-clearing facilities were outstanding. The minute it started to snow or the wind started to blow, the plows started to work and the roads were kept open.

When Gerry and I wanted to go to the officers' club, which was in walking distance, we would get all bundled up. If it was a formal dance she'd tie up her dress, put on boots, carry her bag, and as soon as she got in the club, take off her boots and put on her dancing shoes. The weather was a constant challenge, often 30 or 40 degrees below zero. We had airmen who would try to run from the NCO club back to their barracks, and they'd get frostbitten in a few minutes.

We finished the hospital. I should have put that in earlier. I had the hospital turned over within three weeks. That was done with a lot of cooperation from the base. We had a long punch list of things yet to be done, but they accepted it because they wanted the hospital working.

Gerry got a job over there. She was the head nurse and ran the dependents' clinic for over a year, which was quite nice and made her stay much more enjoyable, especially in the winters. Our little dog, who had no hair, found Goose Bay unacceptable. He had to go out even in the cold weather. We felt so sorry for him. He didn't spend much time doing his business, I can tell you that.

Q: What had been the problem with the hospital construction?

A: It's just they couldn't get the thing finished. The new central heating system for the bases was the major delay that caused the hospital to be way behind schedule. Also trouble with some of the equipment and its installation.

Q: What about the contractor and your contract?

A: The contract was with Merritt–Chapman and Scott and Johnson, Drake and Piper—a joint venture called Drake–Merritt. This contract was like the Atlas contract used in North Africa, a cost-plus/price-redetermination contract. The contractor would build everything as a cost-plus and, at the end of the job, auditors determined a final cost and, as I recall, allowed 6 percent profit.

Contract administration was significant. We had 35 people in the Corps office. Our administrative assistant, Mr. Olsen, knew the procurement and administration regulations of the Corps. Olsen's favorite response to any requirement was, "No sweat on the Goose." The chief engineer was Bob Coy, a GS–13. His group included an electrical section, a mechanical section, inspectors, et cetera. I had a deputy who looked after personnel and the internal matters, and I handled dealings with the post commander and with the contractor. The contractor's principal man was Clyde Newcomb and his deputy was Frank DiMatteo. I hired Frank DiMatteo to work for the Corps in Washington years later when he was the engineer for USAID [U.S. Agency for International Development]. Any rate, at Goose Bay he was a young engineer for Drake–Merritt.

Executing this contract was a fabulous experience for me. The experience came in very handy later. It's strange how these things work out. My good fortune was that every assignment provided an experience that was needed and important later.

To execute our contract, prepricing changes was critical before work began. Failure to control prices was also a problem at the hospital. I recall that to regain control we established a price ceiling for the entire remaining hospital work, rather than trying to work out a price on every nut and bolt.

Every morning at 8 o'clock we'd meet on the work for the day and how it was going to be handled. We used a Title 2 contract with Fay, Spofford, and Thorndyke out of Boston for the inspection work. They were, in effect, part of the Corps' area office. During the construction season Fay, Spofford, and Thorndyke had about 20 people. Their top man up there was retired Corps of Engineers Brigadier General Mason Young. I respected his judgment, of course, and he respected my position, so we managed to work together.

Fay, Spofford, and Thorndyke had designed the Goose Bay program. So in a sense they were inspecting themselves. The Corps supervisors feared the Title 2 contractor was overlooking mistakes in design and therefore letting the contractor do some things that probably shouldn't be done. There was no substantive indication that that was true, however. Still, it was a cause for some tension.

Progress under these arrangements became very good. Our administration was very complicated because of the type of contract. The team [contractor and Corps] did finally develop the attitude we wanted: "Let's get this job done." We burned a lot of midnight oil on those contract administration and contract changes. Getting Mr. Newcomb to become a cooperative partner in this was one of my main challenges.

Internally we were tough on some personnel behavior like drinking, tardiness, et cetera. The contractors' employees arrived in the summertime by the hundreds; in the wintertime they were cut back. They lived in a big barnlike warehouse-type structure with double-decker bunks. It wasn't too bad but just a lot of people in one place. They ran a wonderful mess and the food was outstanding. The contractor also provided good medical facilities which Corps employees used.

The type of contract and the type of contractor we had under the circumstances proved to be of great value later on in Vietnam, the Israeli airfields, Saudi Arabia, et cetera.

In my recollection, that probably was the first job that put me so clearly in harm's way and into rough going. There was a constant opportunity to fail. If you didn't pay attention to your job you would get fired—and you'd probably deserve it. I can't think of many circumstances where the demands on the area engineer, on a day-to-day basis, carried any higher risk than trying to convert Goose Bay to a Strategic Air Command base under a boss like Solomon and a client like Knapp.

In conjunction with the Goose Air Base project, we had the "Gap Filler" sites. Gap Filler included a group of intermediate communications stations being built to fill the gaps in the old Pine Tree Network sites across northern Canada. Together they were to monitor and intercept Russian missiles or aircraft. The Gap Filler sites were from Frobisher Bay south to about the Goose Bay area.

Major John Kelley, a West Point classmate, was in Goose and in charge of the Gap Filler program. He reported to me. I did go to the sites occasionally by single-engine airplanes controlled by bush pilots. That was a thrilling experience on occasion.

The only native activity near Goose Air Base was a little village called Happy Valley on the Hamilton River. We could go there for the Hudson Bay store. Happy Valley was a fishing village. In the summertime the Eskimos would come and fish; in the wintertime most of them would go someplace. There'd always be some around, so we got a glimpse at the native life. Happy Valley was it because Goose Air Base is in the middle of a mass of lakes and tundra. Charles Lindbergh founded this site while looking for air base sites in the World War II period. As I said, the Corps' job in 1955 to 1957 was to convert it from a medium- to a heavy-aircraft facility and provide the base infrastructure to support the new operation.

Then I became the central player in an event which turned out to be important for me in a unique way. I was pulled out of Goose Bay in April 1957, three or four months earlier than the commitment to stay 24 months. That upset General Knapp to the extent that he wrote a letter to the Chief of Engineers, seriously complaining about this. I guess if I had done a poor job he wouldn't have had anything to complain about. In any event, he told the Chief what a great job I was doing and that pulling me out earlier was contrary to the agreement and was a very serious matter to him.

Frankly, I think he was mostly mad that the Corps went back on its agreement, but in the process I benefitted. By this time, Colonel Solomon had been replaced by Colonel [Aldo H.] Bagnulo, just one of the nicest men you'll ever meet. Solomon had retired and gone to work for Metcalf and Eddy.

Q: What was your next assignment?

A: I left Goose Air Base and reported to OCE [Office of the Chief of Engineers] to head up the assignments division for Corps officers in the grade of lieutenant colonel and lower. In those days, you recall, the officers were assigned by the Chief of Engineers. This was April 1957.

Besides General Knapp's complaint, the move led to another issue. Colonel Dick Hennessy, who had agreed to send me to Goose Bay, had promised me that when I came out of Labrador Bay I would get a battalion. In fact, for a short while I was earmarked for the 10th Engineers, 3d Infantry Division, in August. The orders were changed to read OCE personnel and Hennessy got quite upset. So here came this complaint from Hennessy, for whom everybody had great admiration, raising hell because I wasn't going to go to a battalion. I would just as soon have come in quietly, but I wasn't allowed to do that. I finally arrived at OCE and stayed for three

years, getting to know most of the officers in the Corps while handling personnel assignments. That also turned out to be a valuable staff experience.

I had had an opportunity in both public works and military construction in dealing with the other services, and now I was going to get my first taste of staff duty and personnel management, a completely different field. I'd been in the supply business in Europe, and now the personnel business.

To be assigned to the personnel division was a compliment. Why? Simply because they had the choice of all officers available for assignment. They wouldn't bring in somebody they didn't want.

Initially I wasn't too sure about this type of assignment, but it turned out to be excellent. Once again I found myself working for people who were excellent managers and supervisors with the ability to express themselves well. I was to enter a job which would educate me about the Army and its personnel policies. In time I knew the records of almost all the engineer officers. I knew what they were doing and what jobs were best for each. Consequently, I had an influence on a lot of people's lives. I selected those to attend civilian graduate and military schools and was responsible for the duty assignments of all lieutenant colonels and lower.

Ed Gibson was a captain working for me at the time. K.T. Sawyer, lieutenant colonel at the time, was there, and Colonel Bob Ploger, who handled the military program. Steven Hamner, a brigadier general, ran the total personnel office, military and civilian.

The first Saturday in the job I got called to the Chief's office. I'd never met General Itschner before. The Corps was considering sending the dredge *Henry Bacon* and an engineer company to the area and he wanted to know a bit about it. I felt fortunate to meet the Chief of Engineers early on in this assignment. Incidentally, I had known the dredge when I was in Savannah—its home district.

The tour in OCE, though, was another segment of broadening the base of experience. I recommend an assignment in the personnel business, but be prepared wherever you go to ask about your next assignment.

I felt my mission was to do everything I could to give every officer the best chance to become a general. Every assignment was based on what was the best for the officer within the needs of the Army. In peacetime I think the approach is crucial to assignments personnel because they are really training an officer to have the most value during stressful situations. If they capitalize on individual strengths and assign him to a job that broadens those, he's going to be better than if he is just kept doing the same thing over and over again.

In considering a captain's assignment, we'd start with the idea that we were going to get him to Leavenworth. Now, if he was in Leavenworth we were going to assign him with the idea to get into War College. We looked upon the school systems as the stepping stones to growth. Half the officers make Leavenworth, and a fourth of them make the War College. If an officer gets through all those, then he has a chance to make stars. We studied everybody's record when he'd come up for assignments. We'd look at what he'd done, what he needed to do, and his preferences. Actually, the preference card was important. Pretty soon the officers began to realize that their preference cards should be built around what they thought they needed.

One civilian handled the colonels' assignments—Percy was his name, but all full colonels' assignments were approved by then Colonel Ploger.

So that was a three-year hitch. I spent one year doing the assignments, one year in the policy branch, where we wrote the policies and did studies to foresee the personnel requirements,

acquisition needs, et cetera. Then the third year I was exec to the head of the military assignments. By this time Colonel Ploger had been replaced by Kelley, Roy Kelley. Both of those people made general. The fact is, practically everybody assigned to that position made general.

So anyhow, during those three years I became familiar with the Pentagon and also saw the Chief of Engineers on occasion. I learned how staffs worked and began to know many people I would see later.

The assignment team at OCE always went to the military schools and announced assignments, just like Hennessy at Leavenworth. Well, I did that for the C&GSC and senior service schools and also West Point. I'd tell the USMA graduates who selected the Corps of Engineers where they were going to go and discuss the Corps' opportunities. Frequently we'd go to Belvoir and talk to the advanced course officers.

The Chief of Engineers commanded all engineer officers, the troop units, and the Engineer School. I left OCE in 1960. Later, the Chief lost personnel management, and though it may have been good for the Army, it wasn't too good for the Corps because the Corps absolutely had the best career management program in the Army. I left there in 1960. In 1962 or 1963 they did away with the branches. Every branch soon reached a common level, and in the process the Corps' branch career management suffered because the career management within the Army as a whole has never quite equaled the level of personal consideration and quality that the Corps had before.

Q: So the idea—taking personnel functions away from the branch chiefs—often is associated with part of the McNamara reforms, but the idea was around before that, really, you're saying?

A: That's right. By 1958, the Army was told to get smaller. We had a lot of heart-rending problems. I recall one colonel at the port ready to go overseas with his family. I had to call him on the phone and tell him that he was not to move because he had been selected out of the Army. You know, these were tough personal things. Many people were caught with one foot off the ground.

Q: Did this tend to be a little heavier at the higher ranks, at major and above?

A: Well, of course; however, it wasn't quite so painful if the officer was eligible to retire.

Q: Yes.

A: None of the colonels let go were to be generals, and they knew that. Still, it's a big disappointment to those affected.

Q: Did this hit a little higher and not so much at the lieutenant-captain level? Or was there a big reduction there too?

A: No, we tried to keep the lieutenants and captains because we were short in these grades.

Q: So it's that World War II bulge that's some of the problem?

A: Yes.

Q: I have just one follow-up question. Did the Chief, General Itschner, take a personal interest in assignments?

A: Yes, and he took a special interest in the War College list and generals' assignments.

Q: In the War College?

A: Yes. In fact, the Chief took an interest in all the assignments. We would have a slating session every year of personnel to fill battalions, the districts, and other important jobs. Mr. Percy would take the colonels and we'd take the lieutenant colonels and we'd match them with job needs.

Then the Chief would have a meeting with his principal staff. We would lay out the personnel division's recommendations, and 95 percent of those would be probably okay. Everybody around the table had a crack at them until finally everything would fall into place and produce an approved list. That's how the assignments were made. So the Chief definitely took an interest, and there were certain key assignments he'd approve personally.

Itschner wanted a bachelor for an aide. We looked also for a fellow who was a good student, good in English, because Itschner was an excellent writer. We did, and it turned out to be Don Weinert, but contrary to his file he wasn't a bachelor any more. He'd gotten married at Christmas. I believe they let him go. I can't be sure. General Itschner took a much deeper interest than just that case, of course.

I think every Chief took a deep interest in these internal assignments: who was going to be running the personnel business, who was going to be running the operations business, et cetera. Not the generals, but the next level. Sometimes he'd throw us an assignment and say, "We're going to put a colonel in this instead of a general," or, "We're going to put a colonel here who's going to be a general." He'd have those kinds of requirements.

Q: Now, at the general officer level, that was Army, is that right?

A: Yes. The Army's General Officers Branch existed, and the Chief of Engineers had a lot to say about engineer general officers' assignments. I'm sure he had more to say in those days.

Q: Any further thoughts on the personnel assignments?

A: The one thing about the personnel assignment is that the job gave me the opportunity to meet so many of the Corps' officers and their families and also to participate with people who were going to be future principals in the Corps.

I also learned that probably the worst person to plan a career is the individual himself. His future is better managed by others. It's sort of like a lawyer defending himself in court. He's got a fool for a client.

Q: How did your next assignment come about? In May 1960.

A: I think I mentioned the fact that I had nothing to do with developing the senior school list. Even so, I knew I had been recommended to go when I finished my duties in the military personnel office. When that list came back from the Chief of Engineers' office or elsewhere, my name was off the list with the comment that, "Before he goes to War College, Morris should get a battalion."

That was probably right because I hadn't commanded troops since 1945 in World War II. As mentioned earlier, Dick Hennessy, who was assigning personnel when I went to Goose Bay, Labrador, had planned for me to go to a battalion in 1955. Instead, I went to Labrador for two and then OCE for three years. So the time lag for my getting back to troops was extensive, and deciding that I should get a battalion before I went to War College was proper.

I was assigned to the 13th Engineer Battalion of the 7th Division in Korea. While en route overseas, I learned that my assignment had been changed from the 7th Division to the 1st Cavalry Division, 8th Engineer Battalion. That was quite a surprise because the 1st Cav Division was the first tactical unit south of the DMZ [demilitarized zone].

I hadn't been with troops for so long that I remember telling somebody I probably wouldn't know a soldier if I saw one. Still, I was going to the most active engineer battalion in the Army at that time. I arrived about the 1st of May and found that my predecessor had been reassigned and the acting battalion commander was a Major [William] Curry. I had a good opportunity to make

improvements. We were near the village of Tonga-ri, south of Munsan-ni, on the west side of the peninsula. Our battalion area was supplied water from two large storage tanks at the top of a hill. Those tanks with the false work looked like a castle, and I noticed when I arrived that it was a pretty disreputable looking castle. It needed painting, timbers were loose and so forth. It gave me the idea that maybe our battalion wasn't in too good a shape. We had an officers call that first day, and at the end of my introductions to the battalion officers and senior noncommissioned officers, I said, "Let's get that castle out there fixed up and painted."

Everybody cheered. I didn't really understand what had happened until I found out that my predecessor had said that they were not to spend time or effort on such things as painting and superficial caretaking. Well, to me, the castle on the hill was a little more than just superficial. It symbolized our branch and unit and it either should have been repaired or removed. There's nothing worse than bad advertisement. Anyhow, that got me off to a very good start with the members of the battalion.

I had a fine staff of conscientious, hard-working officers. There were three majors—battalion executive, S-4, and S-3—and six very good company commanders, all regular officers except headquarters company commander. The ROCID [Reorganization of Combat Infantry Division] at that time had five battle groups, each with an engineer company in support. They were spread from the north of the Imjin River right up against the DMZ, southward a distance of some 10 or 15 miles and across the division front.

In about a week I announced an objective for my term. I wanted to get the battalion back to being a combat battalion instead of being laden with miscellaneous construction missions, extra equipment, and numerous higher-echelon maintenance requirements. I went to see the division commander and proposed that we should stop making asphalt, stop heavy construction, and concentrate on getting the battalion back to being a combat battalion supportive of the division. "That's what I want to do during my year here."

I didn't know if he was going to like it or not because the division people wanted engineers doing various kinds of work, but I pointed out that there were other engineers in the theater for such missions. His response was, "Fine, go ahead." So I did. That was what we spent our year doing. The battalion was trimmed and trained to be a proper divisional combat battalion. It gave good support to its battle groups and to the division, and the division commander appreciated it. When my term was over, I was one of two officers to get a commendation medal. Today, it doesn't seem like a great reward, but in those days and since there were only two battalion commanders selected, it was quite a compliment.

So that was the big picture. Let's take a look at some of the specifics that occurred and the people.

We had an excellent group of soldiers and officers. One of our first sergeants was Sergeant [Leon L.] Van Autreve, who later became Command Sergeant Major of the Army. I would run into him again in Vietnam. All the 8th Engineer first sergeants that made it to Vietnam became command sergeant majors. One, Command Sergeant Major Bush, became my second command sergeant major in the 18th Brigade in Vietnam.

The officers included at least four graduates of the Military Academy, all of whom did very well in the Army later. At least two became general officers. One in particular was John Moellering, a new second lieutenant. I was his first battalion commander. John later became the commandant at the Military Academy. He ultimately became the youngest lieutenant general in the Army and retired from the office of the chairman of the Joint Chiefs of Staff.

Besides the outstanding people, there were events that made marks in my memory. First, of course, was the operation of the 1st Cavalry Division. Our commanding general was Major General Charles Dodge, an excellent division commander with a lot of esprit and good leadership. He taught all of us. His deputy commander, [Major] General Frank Britton, succeeded him about halfway through my tour. The battle group commanders were also quite outstanding.

Bill Blakefield commanded the 7th Cav and later became a general officer. I remember going to see him one day. He had a picture of Custer's Last Stand behind his desk. I asked him why he had that picture up there. He said, "Well, I have to be reminded that the 7th Cav can't win them all."

The purpose of my visit to Blakefield was to announce that I was going to put Second Lieutenant Moellering in charge of preparing a site for a TOW [tube launched, optically tracked, wire guided] missile demonstration for the president of South Korea. The 7th Cavalry had the mission to arrange the demonstration on a hilltop somewhere in the division area of operation. Blakefield thought that a second lieutenant was probably not up to this responsible job involving the president of Korea. I convinced Blakefield that he could depend on Moellering. He conceded, at least, to let me try, with the promise that I'd keep my eye on it. Of course John did an outstanding job. I think Moellering was probably the best second lieutenant I saw in my whole career in the Army, and that particular assignment was his first major challenge.

The company commander of A Company was first Captain [Freeman] Cross followed by Wayne Hoey, both of whom show up later in my duties. The company commander of C Company was Bob Tener, a West Point graduate, as was Cross. Tener later became the executive to the Assistant Secretary of the Army for Civil Works and district engineer in Nashville. Jim Miller, the commander of E Company, was also a West Point graduate whose last tour of duty was also on the Army staff as executive to the Secretary of the Army. My battalion executive was Major Hawthorne, an excellent soldier and perfect for his duties.

I finally quit smoking cigarettes 8 August 1960, the day that I woke up to find that I'd smoked a carton of cigarettes in three days.

In late November I began to feel bad in the evenings. I found out later it was hepatitis, and the doctor put me in the hospital the 31st of December, New Year's Eve. I had already arranged a battalion commanders' New Year's Day reception. The officers enjoyed the affair and showed up at my hospital bed later on New Year's Day. Each had a plastic cork from a champagne bottle on his little finger. They wanted to wish me a Happy New Year. I appreciated the gesture but I doubt it made me feel much better. I was the senior patient so I had a private room even in a MASH hospital. There was a ward full of hepatitis patients across the corridor. Hepatitis patients were not allowed to work. They had to stay in bed, eat a lot of high-caloric food, and gain weight as a result.

I was discharged on the 15th of February 1961 and on a strict, nonalcoholic and controlled caloric diet until I could get my weight down. By 15 May I had lost 45 pounds and the doctor told me I could drink alcohol if I wished. I wasn't happy with my weight so I decided to wait another month. I put a notice in the daily bulletin that 15 June would be "M-Day."

About the 1st of June I announced an officers call for the 15th of June without any agenda. All the officers were curious until the officers call when I told them M-Day stood for "Morris's Martinis Day." Martinis were on me; anything else they'd have to pay.

As it turned out, we got to bed quite late that night. That M-Day was the beginning of a tradition. Henceforth 15 June would be the day the battalion commander of the 8th Engineer Battalion bought all of his officers martinis. When I got to Vietnam eight years later, it was still going on.

That's how traditions get started, but it's really not the end of the story because, as luck would have it, the division called an alert at 0400 on 16 June. This meant that we had to be combat-loaded and moving our vehicles out of the compound within two hours. Well, the 8th Engineers normally could do that in about 30 or 40 minutes. On this particular morning everybody was slow to rise and slower to function. About 0500 the division CG [commanding general] called for a report, and I told him we were going to be ready within the allotted two hours. After a few minutes General Britton showed up and wanted to know just what was the problem. So I explained the whole scenario. He thought that was kind of humorous. Fortunately, we did make it within two hours and got off the hook as far as the division commander was concerned.

At any rate, a small case of hepatitis ended with the initiation of a tradition.

The battalion's duties need to be discussed further. We did a lot of training, of course, to keep ourselves sharp. Our engineer companies accompanied their battle groups on maneuvers—training exercises. The division also had training exercises as did the battalion. I moved the whole battalion to the field several times, which was an innovation to that group, and then we had the separate battalion missions, of course, such as airfield and road work and our equipment readiness program. We removed several active minefields. This was a little hairy since these Korean War minefields had been in place for years. We had only one accident and that because a soldier violated the rules for entering and leaving the minefield.

The engineer battalion was issued three combat engineer vehicles [CEVs]—Sherman tanks with a mounted 'dozer blade. The crews consequently participated in the division armored firing exercises. Our Sergeant Garcia placed first in the 1st Cav Division firings, much to our glee and the armored unit's dismay.

We accomplished our initial goal of bringing the battalion to a solid footing as a divisional battalion. We gave the division good support, and we steadily improved team performance in executing a divisional combat battalion's mission.

One personal lesson learned emphasized that communications are so important, particularly when non-Americans were working in conjunction with us. Our water supply was taken from a nearby creek, treated, and pumped up to the tanks that I mentioned earlier, and gravity fed to the camp. Cold weather presented certain problems. The piping was not insulated, and to avoid freezing the water in the lines required frequent pumping.

One frigid evening I went to the water point and explained to the soldier on duty that we had to run water through those lines for ten minutes every hour so the lines wouldn't freeze. He did exactly what I told him. The only problem was that ten minutes every hour was not enough to fill the tanks, so while the lines didn't freeze, we ran out of water the next midday. The lesson was communications. He did what I told him, but I thought I was telling him something else.

Nevertheless, that etched in my mind the thought that if somebody misunderstands or doesn't do what is asked, the odds are that the problem is with the sender, not with the receiver. So I couldn't, in good conscience, blame this soldier for letting the camp run out of water. I really could only blame myself because my instructions had not been sufficiently clear.

Our battalion didn't have a chaplain because the division was short of chaplains. We were getting some help from the divisional chaplain, but it wasn't very satisfactory. I finally arranged with the Baptist Mission in Seoul to send us a minister, and he turned out to be truly outstanding. We had few soldiers and only a very small number of attendees at church until he arrived, but in short order the chapel was full. The value of religious services and of religion to soldiers when they're far away from home became evident.

Our battalion supported the Pak-Ai Orphanage of some 60 children of varying ages between 5 and 10 or 12. About 20 children were taught to sing a cappella by their leader, and every Sunday these children would be our choir for the church services. Their voices were exceptionally beautiful. So with the fine minister and with this choir, our church services became well known throughout the 1st Cavalry Division. Our Sundays became special events to the officers and men of the battalion. A poor situation soon became a real winner.

In the March 1960 time frame, two things happened. One, I was selected to attend the Army War College and also for promotion to colonel. This early promotion, even after seven years as a lieutenant colonel, jumped me ahead of the large hump of lieutenant colonels with a 7 July 1951 date of rank.

Also, I was able to make plans for my family's next move. I stayed in Korea just 13 months and was back in the USA by 1 June 1961. The day I left, I was flown to Kimpo Air Base in the battalion commander's helicopter, an H-13. On leaving we circled around the deck off the officers' club where all the people were standing, waving goodbye.

Q: May I interrupt you with just a couple of follow-up questions. You described how the 8th Engineer Battalion had gotten much equipment left that wasn't part of the TO&E [table of organization and equipment]. Was that, in your experience, fairly common? Does a divisional battalion, if it's in a place for a while, does it become a lot like a construction battalion?

A: I'd say the answer to your question is no, it's not too typical. When you realize that numerous wartime units in Korea had been returned to the States, a lot of equipment left behind would be picked up by the units which remained.

Our situation was one of inheriting the stuff from some other place, and there were many things the engineers could do for the people in the division. The resulting problem was the battalion wasn't doing what it was supposed to be doing. The 44th Engineer Construction Battalion was there, and we also had the 36th Engineer Group for corps support. The commanding officer of the 36th Engineer Group was then Colonel Dave Parker, the same Colonel Parker I had met in Tokyo at the end of World War II.

Dave replaced Bob Mathe, my classmate. The corps engineer was Colonel Roy Dodge. The Eighth Army engineer was Colonel Duncan Hallock, and one of his assistants was Colonel Don Eister, who had been with me in Tokyo. I mentioned him earlier. He killed himself in Korea. That was sad, too, because I liked Don very much.

Q: Did you feel that you had, as division engineer, good access to the division commander?

A: Yes. The engineer battalion was important to General Dodge and also to General Britton. The signal battalion was important also. You have to understand we had a unique situation. The five-battle group pentomic division only lasted a short while, but it aligned an engineer company with each battle group. The battle groups were relatively small and widely dispersed, so the engineer companies were important.

I saw the division CG at least once a week at his staff briefings. Also, I had an assistant division engineer at division headquarters. The assistant division engineer in the 1st Cavalry Division for part of that time was Captain Miller, earlier commander of Company E. He lived at division headquarters; I was some miles away from division headquarters with the battalion.

Whenever an important issue came up, Miller would call me, and if appropriate I'd go over and see the division commander. I tried to see the division commander one-on-one every couple of weeks, and if he didn't call me over there, I'd go see him. Yes, it was a good relationship.

Q: Now, you may have mentioned this earlier. This was the pentomic division organization?

A: That's what they called it.

Q: Yes, the five battle groups. Your early promotion to colonel—the division commander must have had a role.

A: My efficiency reports probably looked pretty good after the three years there in personnel. I mean, I look upon that personnel job as one where I didn't really have an opportunity to fail.

You recall I mentioned my exit from Goose Air Base, that the base commander and the Air Force general wrote a glowing report about me because he wanted to prove a point. So I had a good file before I arrived at the 8th Engineers. By the time the board met, probably I had at least one efficiency report from the division commander, and once my record showed battalion command, the prerequisites of being selected for colonel were met. The rest of it was whether the board thought my overall record deserved promotion. I'm very happy they did because, you see, by the time I actually made colonel, full colonel, I'd been a lieutenant colonel eight years. I made lieutenant colonel in 1953 and full colonel in 1961.

Q: It strikes me that the personnel officer assignment, the down side of that is that it's a job that requires diplomatic skills. I mean, it does strike me that you could make enemies.

A: Well, you're right. To be good in that job you have to try to understand people and put a lot of thought into how the other guy feels about things. Diplomatic may not be the best word, but in any event, you have to be compassionate, not that you have to feel sorry for people. You've got to understand their family situation—to evaluate if the assignment will be adverse or whether it's going to make them happy or unhappy. I don't mean necessarily that you never do things that make people unhappy. You'd rather not, but sometimes you can't avoid it, in which case the way you handle the situation makes a lot of difference in its acceptance. So you're right. With the wrong approach you can make enemies in that job, no doubt about that.

Q: Moving back to Korea, where you were—the 1st Cav was up on the border at the DMZ. Were there incidents when you were there?

A: Yes, there was always something going on but nothing as serious as happened a few years later. At Panmunjom, where the North and South met to discuss various treaty matters, we built blocking positions and fortifications on strong points for the defense of the area. We repaired bridges and erected floating bridges in the Imjin River.

We could go into the DMZ for various reasons including reconnaissance to look for indications of any unusual activities.

Q: Being assigned to a battalion on the front lines in 1960 was certainly a good assignment.

A: It was an excellent experience. It truly was. I'm very proud of having been in the 1st Cavalry Division. It is a division that makes me proud. I guess all the people feel that way about their divisions; I do particularly. When I'm in uniform, I always wear the 1st Cav patch on the right sleeve, and I belong to 1st Cav Association. I think in those days the officers who went to the 1st Cav Division were well selected. We had quality people.

Q: So you were promoted to colonel then and came back to the Army War College in the summer of 1961?

A: Yes. When I went to Korea I left my family in North Carolina. We'd been living in Arlington in a nice home there, but my tour in Korea provided a good time for Gerry to go home where her parents and sister were living. I felt better about it because she wouldn't be quite so alone.

We left behind in Virginia two very good friends; one was Dick Connell and his wife Betsy and Jim and Laura Bunch. Jim was from Oklahoma and had been at Goose Bay with me. He, Laura, and his two daughters became and still remain among our closest friends. Bunch returned to OCE some years later to run the personnel program. Connell also returned as a brigadier general to head military construction while I was Chief of Engineers.

Anyhow, I returned to North Carolina from Korea to gather the family. During the short stay Susan was hit by an automobile and John broke his foot on his new bicycle, so we limped off to Carlisle with our dog and two wounded children. Both recovered nicely, fortunately. I was senior enough to get quarters at Carlisle Barracks and was assigned a nice cottage in College Arms. Small but satisfactory. Carlisle is truly a very pleasant environment, and you meet not only the top people from other branches of the Army, but also key individuals from other services and the State Department.

As I said, life at Carlisle was very nice, particularly for the family following the year's separation. Our daughter got into the horse business and our young son was busy finding out what school was all about. We were in the middle of the antique country, so we got into refinishing furniture.

Of course, I was there to learn what makes our military and U.S. government world go round and how the Army and the other service departments work together. We had outstanding guest speakers. The War College is an exceptionally fine educational experience.

The big exercise in my memory was writing a thesis on some broad subject. I chose the Organization of American States. The crunch came in deciding when to do it. My adviser convinced me that getting that thing done before Christmas would make for a happier holiday. Otherwise, I would probably have to spend Christmas writing the paper, which was due in the middle of January, as I recall.

The Vietnam War was warming up. Our deputy commandant was General [William] Train and his son was one of the first officers killed in Vietnam. This was still 1961, 1962. That was an impact event for the students and faculty.

I was actually promoted to colonel in the fall. Gerry and our children helped the commanding general pin on the "eagles."

Another highlight was watching John Glenn orbit the earth. That was singular and outstanding because the space program had quite a bit to do with our educational program. Our State Department resident was John Liddy. The class of 1962 produced many future leaders in all services.

Tulsa District

A: Finally, as the year drew down, the question of my next assignment arose. My classmate Bob Mathe was handling personnel assignments. He called me one day to ask my preferences. I said, "I'd like to be a district engineer, but I think I'll ask for a group, an engineer group, troop assignment."

He asked, "Why are you going to do that?"

I answered, "I think I'm too junior for a busy district, and the only ones I probably could get would be Charleston or Wilmington, and I can't go to Wilmington, my wife's home. That leaves Charleston, so maybe I ought to wait a while and go for a group now."

He indicated that in his opinion I ought to go for a district.

Well, the next thing I knew, I was going to Tulsa, the largest civil works district in the Corps, and I would be the junior district engineer. The Chief of Engineers then was General Wilson, and from my own experience I think this is how the assignment evolved. I don't know if I mentioned it or not, but I saw a lot of General Wilson when I was in Goose Bay and also in Savannah earlier.

Q: He was in the North Atlantic Division?

A: He was in charge of military construction in OCE while I was in the North Atlantic Division.

Q: Military construction?

A: Yes, I pulled quite a boner with General Wilson in Goose Bay. When he came to Goose, Gerry and I had him to our house for cocktails. I handed out some of those napkins with humorous sayings on them. After he went home I went around to help Gerry clean up and I noticed the one we gave him said, "Killjoy was here."

That wasn't such a good idea at the time, but I'm sure he remembered me when he became Chief of Engineers. Anyhow, my understanding is that when the post-War College assignments came around to General Wilson, he set my name aside for a bit. Finally, they plugged everybody else in the holes and two things were left over, Tulsa District and me. So the Chief took a chance and put us together. That's sometimes the way it is. Besides, it makes a good story. Some years later, General [William] Cassidy told me he was sure Tulsa would be a "make or break" test.

In any case, I drew Tulsa. When I came home that day and told Gerry that we were going to Tulsa, she said, "Well, you can go by yourself. I'm not going." Being a beach lover, she didn't think much of going out to Oklahoma. The kids were excited about it and she, of course, went.

We left Carlisle about the 1st of June and got to Oklahoma a few weeks later. Colonel Howard Penney [later lieutenant general] was the departing district engineer en route to Vietnam. I had not met Howard, although I knew of him. He gave me a good briefing and I settled into the job and we soon bought a house.

The people of Oklahoma were just great and we started off in a very, very fine atmosphere. To buy the house I needed a loan. I'd met the president of the bank, a retired colonel and very patriotic. Because the Corps of Engineers in Tulsa, Oklahoma, was an important and respected military and public service organization, district engineers were well known and respected. As I was getting ready to go through the necessary loan forms, collateral and everything, the bank president came by and turned to his employee and said, "Don't worry about all that; just give him the loan." You know, that's kind of neat when you think about it.

So we bought this new house out at 5219 Joplin Street. Dave Helms, who helped me find the house, called it 51st and plowed ground. Our neighbor was an American Indian family on their ranch. Their horses would come up to our fence, and John and Susan would feed them carrots. Today our place is almost downtown, as Tulsa has grown so much in that direction.

Thus began our first tour in charge of a major civil works program. We'd been in Savannah, but in Tulsa I was in charge. Senator [Robert S.] Kerr was still living. General Cassidy was Deputy Chief of Engineers, and sent me off to Tulsa with some good advice. He indicated Tulsa was a very important district, that Senator Kerr was very much involved in the public works program as the chairman of the Senate committee. He wanted me to keep him posted on Senator Kerr and to be responsive to the senator's needs and so forth.

I asked if that meant anything out of the ordinary, and General Cassidy asked me to just remember that Senator Kerr was important to the water program, to the Chief, and to the Corps.

Senator Kerr's assistant was Don McBride, a truly outstanding public servant. He worked with Senator Kerr all the time the senator was in Washington. The senator died, 1 January 1963, and McBride stayed on with Senator [Mike] Monroney, who became the senior senator from Oklahoma. Later, McBride was appointed director of the Tennessee Valley Authority. Don and I quickly became and stayed very close. Later, if I ever had a problem, even as Chief, I could always go to Don and get good, solid political advice. I have diverted here a little bit, but that was the beginning of a very important relationship. He was a great teacher of how to do things in the right way politically.

The Tulsa District boundaries included the drainage of the Arkansas and Red Rivers as far east as the Arkansas state line. This meant parts of Colorado, New Mexico, Kansas, the northern tier of Texas, and all of Oklahoma were included. The annual workload was \$100 million and the district staff was approximately 1,200. Tulsa had no military construction.

Howard Penney probably was the best staff officer I've ever known and an excellent planner. Howard devoted much of his tour to propelling the projects through the planning into the authorization stage. In those days there were a lot of projects. I recall being involved with the construction of 26 dams, mostly Howard Penney's projects. That's more than the entire Corps has built in many recent years.

Howard's emphasis on planning meant that the construction side of the house had built up a backlog of disputes. The district engineer as contracting officer had to take care of these disputes, and that became my first objective. I didn't want to interfere with the planning process, but I felt that we had to get rid of some of those disputes. Work was being delayed and we weren't getting enough bidders on the jobs. One reason was they couldn't get their money while changes were tied up in disputes, et cetera.

I had learned in Goose Bay that the government's and the public's interests are best served if the contractor and the contracting officer adopt a mutual philosophy of getting the work done. We set up a program to eliminate and also to avoid disputes. Three years later we did not have a single outstanding claim. In this process I believe that we gave the contractors nothing beyond what they deserved. On the other hand, I am absolutely certain that we saved the taxpayers money because we just didn't have the delays and the hang-ups which delayed needed projects from becoming productive. Besides that, instead of having one and two bidders on a job, we were beginning to get 10 and 15, and our prices were much better. Also important, we generated an enthusiasm to produce. The morale of the construction industry in the Tulsa District area became very good.

Of course, internally our morale was also high because we had a great program. I mean, it was not a matter of the district wanting something to do. It was a matter of managing it so we did it well while accommodating all this work.

A few months into the tour, the Waurika Dam on Beaver Creek became a major event and challenge. Waurika, Oklahoma, was the site of a Bureau of Reclamation project in the final preauthorization stage. To show you Senator Kerr's power—without going into all the political background—there was a congressman from Texas whose district possessed a dam site on another stream which came out of the panhandle of Texas into Oklahoma. There was also a dam site just inside Oklahoma.

As I understand it, the Texas congressman was on the Interior Committee and threatened to pigeonhole Waurika unless Senator Kerr supported the development of his dam site in Texas. Kerr refused and had the project taken out of the Bureau of Reclamation's authorization package and put into the Corps of Engineers' program. General Cassidy had forewarned me this might happen. On 20 November 1962, I was told I had to have a survey report in Washington within 30

days, and I told General Cassidy, "It's going to be tough." His reaction was for me to get a report to OCE somehow by 20 December to meet the authorization process schedule.

So we went to the regional office of the Bureau of Reclamation in Oklahoma City. Fortunately, Mr. Barkley, the head of that office, knew what had happened, and when I asked to start with his survey report, he reached in the file drawer and he gave it to me.

Myron DeGeer was the number two man in the engineering division at that time. The chief of engineering was Mel Parse, who was preparing to retire. So Myron DeGeer was the real engineer on Waurika. DeGeer and I took that report back to Tulsa. He ripped the Bureau cover off of it and began to study it. I mentioned the need of a public hearing. He said, "You've got to have a public hearing."

So right away we put out a two-week notice for a public hearing in Waurika High School, advised Senator Kerr's office and Don McBride, and asked for their help. I remember mentioning to Senator Kerr one day that we are going to have a problem in Waurika because I didn't know any of those people and they didn't know the Corps; they knew the Bureau.

He said, "Colonel, when I get through with this, they'll love you like a brother."

On the day of the hearing, the schoolhouse was full of people. I couldn't believe it. Senator Kerr had had the schools let out; all the townspeople had come to see "Democracy in Action." We started off about 10 o'clock in the morning. I went through the normal presentations and showed pictures of the floods and the damage the dam would control plus land requirements and other things. About 12 noon things had gone rather well, so we decided to take a break for lunch.

As I was looking at the maps, thinking through the next session to begin after lunch, somebody put his arm around my shoulder. I looked up and it was Senator Kerr. He wanted to know if I wanted to build this dam or let the Bureau of Reclamation build it.

My response was easy. "Sir, after all the trouble I've gone through in the last three weeks, if we get this thing authorized, I sure want to build it."

He said, "Okay, it's yours."

That's what happened. It's unbelievable, but it happened. I was gone from Tulsa when the dam was finished, but I did go back for the dedication. Congressman Carl Albert was there. He was the Speaker of the House at the time. He told some of these stories about the Waurika project.

I went to Wichita, Kansas, during the first six months I was the district engineer. Senator Kerr was to make a speech on the Arkansas River project being built by Tulsa. The river goes on to Wichita, and the gleam in the eye of people at Wichita was to get navigation extended up there.

Senator [Frank] Carlson, a Republican and the senior senator from Kansas, introduced Senator Kerr as a great "Republican" from the state of Oklahoma. Democrat Kerr, a 110 percent Democrat, brushed that off and then made this speech about a third of Kansas, including Wichita, being in the Tulsa District and the importance of water resource development. He closed by admonishing the group to, "Be careful what you dream because it might come true." I thought that was a great statement. Finally, he had them stand and sing "Shall We Gather by the River." You learn about and feel inspiring leadership by being associated with someone of that stature.

Gerry and I were having an open house the 1st of January 1963 for the district people. We were stunned when we learned that Robert S. Kerr had died the same day. All at the reception knew that with Kerr gone, there was to be a different day ahead. In the Tulsa region he was the leader of a group of the most powerful water resource people of our time: Senator [John] McClellan,

Arkansas; Senator [Lyndon] Johnson, Texas; Senator [Allen] Ellender, Louisiana; Senator [J. William] Fulbright, Arkansas; Senator Carlson, Kansas; and others.

The congressional group included Jim Wright, Texas; Ed Edmonson and Carl Albert, Oklahoma; Wilbur Mills, Arkansas; plus the remainder of the Oklahoma delegation. Insofar as the public works program was concerned, that group formed a political powerhouse.

Don McBride saw the problems and the opportunities, and Kerr provided the essential leadership for solutions and progress. I was able to learn so much about the political arena from them.

Senator Kerr's funeral was held in Oklahoma City, and General Wilson, the Chief of Engineers, came. Ultimately and properly, the Arkansas River project was named the McClellan-Kerr navigation project.

Because of the major and continuous public involvement as part of our work, an active public relations program was essential. Locklin L. Mouton, from Albuquerque, came to Tulsa with his wife, Inez, about the same time as Gerry and I. Locke and I became very close. Donna, his assistant, a GS-2, helped Locke start a public relations program that had high visibility and was driven to keep the public fully informed on the Corps' activities. Donna was outstandingly capable and in time moved up to the top administrative position in the district.

The Arkansas Basin Development Association [ABDA] was the energetic organizing and lobbying group that testified in support of the congressional legislation that supported projects in Arkansas and Oklahoma. The director was Colonel [retired] Francis Wilson. He was a graduate of the U.S. Military Academy and former Tulsa District engineer. He was called "Babe" Wilson because he was forever young looking, and he helped me tremendously.

When I first came to Tulsa, he, Early Cass, Glade Kirkpatrick, Charles Gannaway, Versur Hicks, and some other ABDA leaders had me to the Tulsa Club for lunch and gave their time to bring me into the picture and get to know them and their concerns. From the first days, the national and local power structure became quite clear, much to my advantage. We impacted the public so much that it was crucial that I knew the issues and executed an effective public information program. The ABDA was invaluable.

On reflection, the two things that we undertook initially were to get our construction program in high gear and to implement a positive plan to deal with the public based on an understanding of local and national leadership issues.

To keep everyone in the district aware of what we were to do, I issued district goals and objectives and had classes to discuss how to go about the business of reaching them. The list included cost control by project with special attention to overhead costs. I was not the only one watching the cost data, I soon learned.

General Carroll Dunn, the Southwest Division engineer, called to tell me he was to come see me in late August or early September. General Dunn came and immediately said, "Morris, you've done some good things in the short while you've been here, but you've got one real problem that you've got to solve, and I mean right away. Your overhead's too high!"

I indicated I knew it and explained what we had done and were doing about it. I knew what was wrong, but I had not made a point of telling General Dunn that this was a problem that we were going to solve. So an old lesson was relearned. If you've got a problem, the best thing to do with it is put it out in the open and tell the boss what is being done to fix it, rather than waiting for him to find it.

General Dunn was the division engineer most of my tour. [Brigadier] General [Richard H.] Free replaced him later.

On 22 November 1963, I was in my car with a couple of people from the district, looking at the Keystone project area. We went into a little restaurant in Cleveland, Oklahoma, and everybody was crying. We were laughing and joking, and one of the waitresses said, "Why are you all so happy? I guess you haven't heard the news."

We said, "What news?" They then told us that President Kennedy had been shot in Dallas.

The first appearance of President [Lyndon] Johnson in the Southwest after the assassination was in Tulsa District to dedicate Eufaula Dam. Earlier, President [John F.] Kennedy had dedicated Greers Ferry Dam in Arkansas. I attended and observed the arrangements made for that event. We used the Greers Ferry scenario as a guide to dedicate Eufaula. Security was a big issue, of course. We arranged a plan, which to me was quite safe, and everything was all set when the advance team came. Jack Valenti was in charge. He's now president of the Motion Picture Association. He said, "We can't do it this way." This was only a few days before the event. President Johnson wanted to meet and shake hands and be close to the people and so forth. So we had to change everything.

Jack Valenti also asked, "How many people are you going to have?" The Eufaula Dam was really out in the country. When I indicated 30,000 or 40,000, he said, "Where in the world are they coming from?"

I said, "They'll be here from Tulsa, McAllister, and other places." Valenti couldn't believe we could get 30,000 people for the president.

The event started at 9 o'clock in the morning. We had Indian dancing and continuous events, plus food, refreshments, et cetera. The people started coming. I never saw so many people in Oklahoma at one place. I'm telling you, it was a lot of people.

Governor Henry Bellmon came and started the program at 12:00 noon. The president was coming from some other event and was behind schedule. So we did everything on the schedule up to Governor Bellmon's introduction of the president. Then we stopped, took a break. When the president came, we picked it up again. I met the president as his motorcade came into the area. We had it fenced off with only a little avenue to get up to the bleachers. On the left side there was a full-sized roadside billboard titled, "War on Poverty: The Arkansas River Project." The map of the project had all the dams and cities on it for the entire 435 miles.

He got out of the car, and I introduced myself as the district engineer and asked him for a minute so I could tell him about the project. He indicated he didn't have much time because all those people were going to want to say hello. I indicated I wanted him to look at the map of the project, which is a centerpiece in "*your* War on Poverty." That got me two minutes, which is all I wanted.

Then he shook hands all around and he went onto the platform. Fred Harris was running against Bud Wilkinson for the U.S. Senate. Wilkinson was a great football coach and everybody loved him in Oklahoma. President Johnson put his arms around Fred Harris, shook his hand, made a big to-do out of it. He walked by Bud Wilkinson, never even looked at him. Cool as ice, as if he wasn't even there.

The president gave his speech, and we prepared for his departure. The last thing I was told by the Secret Service was, "When you come back, Colonel, don't get in the wrong car. Don't get in Mrs. [Lady Bird] Johnson's car." Well, I did. They had to get me out of there. That was a little embarrassing.



President Lyndon B. Johnson dedicated the Eufaula Reservoir on September 25, 1964, while Colonel John W. Morris was District Engineer of the Tulsa District.

Later, we prepared an SOP [standing operating procedure] on presidential dedications, and the Chief's office used it as a guide for quite a while. That may have been the only SOP anybody had written on how to handle a presidential dedication. Ours was very successful; we had 45,000 people.

That pretty much takes care of the first one and a half years, and the thread through all this, though, was finishing the Arkansas project. The political consortium, which really was coalesced by the efforts of Don McBride, was successful in getting President Johnson to increase the budget on one project in the whole public works program, the Arkansas River project.

There wasn't a great deal of money added. It was like \$11 million or \$15 million, but it was critical to staying on schedule. General Dunn required Charlie—Colonel Maynard, who was the district engineer in Little Rock—and me to almost swear that we would use the money if we got it. He was willing to go for the money but had to use it properly. I had the upper half and Maynard had the lower half of this project. His portion was a couple of years ahead in construction. Charlie and I had been to War College together so we knew each other well and we'd taken our jobs at the same time. He was an excellent partner on this major project.

As I have said, Dave Helms was probably the best real estate man in the entire Corps. If we had money that couldn't be committed to construction, he could use it to acquire land necessary for the project. We were going along fairly well when Charlie Maynard called and said he could not commit all of his money and asked if I could use about \$7 million. I said, "Yes." He offered to ask General Dunn if he would give Tulsa the \$7 million.

After some discussion I suggested that to keep the boss from being too upset, he let me tell Dunn I had to have \$7 million. When the boss asks you for it, you can say okay, but very reluctantly. That's what happened. So it worked out just fine. We used the \$7 million. Charlie was a great, generous friend.

While the Arkansas River project was the centerpiece, we had other dams and projects, including the extension of the project to Wichita and to Oklahoma City. We spent a lot of time on those two. We figured out how to get to Wichita. Because the top portion of the navigation channel to Tulsa uses the Verdigris, not the Arkansas, we had to jump back into the Arkansas or use some other way to Wichita.

Then there was the project to extend navigation to Oklahoma City, the Central Oklahoma project. It was to be a pump-back facility to conserve water. I came to Washington to present it to the Board of Engineers for Rivers and Harbors. The Kaskaskia navigation project in Illinois was also presented by the district engineer of Rock Island, as I recall. The board and the Chief of Engineers elected to recommend only the Kaskaskia. The Kaskaskia was built. The Central Oklahoma project never made it, although Arcadia Dam, a feature of the project, is in place today.

Q: Might that have been a project that Senator Kerr's death was critical to?

A: If he'd lived, I believe he'd have gotten it authorized. The project was totally within the confines of the state of Oklahoma. Since so much attention had gone to the Arkansas River project, not many states were willing to give Oklahoma another major project right away. That was a political fact of life. It was a good project and should have been built.

Concurrent with that was the salt study. Salt beds ran through southern Kansas and into Oklahoma and Texas. Fresh water would run through them and become polluted. As a result, the Arkansas River at Tulsa is unusable for many purposes because of its salinity. Great quantities of good water could have been obtained by diverting the fresh runoff and streams around these salt beds, and, in some cases, impounding already polluted water to keep it away from fresh sources.

The Red River had the same type of problem and, as far east as Lake Texhoma, was too saline to be used for industrial purposes. The region included Dallas. The Red River project and the Arkansas project were combined into a single program. That was probably a mistake. This was, and remains, one of the best projects in our country, but we could never get it clearly authorized and funded. The Red River portion did proceed, in part, primarily because Congressman Carl Albert was able to have specific sites corrected. I would expect the Red River water now is probably pretty fresh. I thought we had a real winner and pushed hard within the Corps while Governor and later Senator Bellmon worked hard outside and in Congress. Even so, the project did not go, I regret to say. Ironically, if man had created the pollution, correction would have been mandatory. Since nature created the situation, man was not allowed to fix it.

The Little River system, a tributary to the Red River, included a series of dams which run parallel to the Red from an east-to-west direction. There was Broken Bow, Gillham, Dierks, Hugo, Pine Creek, and DeQueen. Of those dams, all were built eventually, but Gillham became a centerpiece later, several years later, in the environmental program. In fact, it was stopped for a while for

environmental reasons. That was long after I'd left Tulsa. Another major disappointment occurred when the Pine Creek Dam was lowered to delete hydropower because oil prices had dropped temporarily. I believed then and remain convinced that the criteria were shortsighted when hydropower was excluded permanently from sites that had the natural features to support power.

Throughout the district area there were approximately a dozen other individual projects. So the program included the Arkansas project, the Central Oklahoma project, the salt study, both the Red and Arkansas, the Little River projects, and a significant group of miscellaneous projects.

While all that planning was going on, we were actually building, as I recall, something like 25 or 26 dams.

Q: Were any of them particularly problematic projects?

A: I mentioned Central Oklahoma and the salt study. I didn't mention the Grand River drainage. The Grand River is an anomaly. The Grand River Dam Authority is a state operation. Fort Gibson was a Corps project and it was the southernmost dam in the series. All the upstream dams had flood control and hydropower. The Corps regulated the flood control for the entire system through Fort Gibson. We worked closely with the Grand River Dam Authority.

One interesting event occurred. Pensacola was a Grand River Dam Authority project being prepared for construction in 1962. The Corps reviewed the flood control and other aspects of the plan. As I looked it over, I thought, "This project seems familiar." I realized shortly that when I was at the University of Iowa many years earlier, I had been given a problem to design the dam and spillway for a project. It turned out that the Pensacola was that dam. I compared my spillway to the one they were building and was happy to learn that their spillway was less than one foot higher than mine.

Some of the most important activities were the public hearings on these projects. The real estate hearings were always delicate. I did all hearings personally—at least ten a year. Sometimes we'd have three or four hearings for the same project, particularly in real estate. I learned early the value and sometimes the difficulty of communicating with the audience. The public attendees included farmers and ranchers who didn't always understand technical data. In many cases we had to get down to each person and his property. I would always make a reconnaissance throughout the proposed reservoir area of a new project. I would then be able to speak with knowledge about individual property and so forth. Public hearings were hard but essential work.

A project called Boswell Dam near Atoka, in Carl Albert's district, was interesting. Mr. Albert had said that as long as he was in Congress, we would never build Boswell Dam. It was probably one of the best dam sites in the United States and was needed for water supply to Oklahoma City, but his constituents objected, and he never let it get built. However, we did have the public hearings in Atoka, which I remember well—a very hostile group. During the noon break one elderly lady in the audience stopped me and said, "I don't understand why you come out here and take our land away from us." She then explained that she had come in a covered wagon with her family many years ago.

I asked to be excused, and as I began to move away, she started tapping me with her cane. Then I said, "Ma'am, I'm sorry to tell you this, but I just have to go to the bathroom."

She said, "Well, that's one place I won't follow you."

During the same hearing one man became very obnoxious. Fortunately on my drive around the reservoir the day before, I had gone by his place and actually seen this same man sitting on his porch in a rocking chair with his feet propped up on the porch post. When he gave me a hard time about the value of property and so forth, I explained I was by his place the day before and he was

sitting on his front porch in a rocking chair. Well, that did it. Right there the attitude of the meeting became friendly.

Q: Did you introduce any innovative programs while you were district engineer?

A: Yes, value engineering. I believed it had a place, so we had had a group of people from Harbridge House put on a seminar on cost reduction for Tulsa District. That was the beginning that led to the first application of value engineering in the Corps. I became known as the "father of value engineering" in the Corps of Engineers. That may or may not be true, but I know we were certainly one of the early ones. I received a nice letter from General Wilson and later a management award from the president of the United States, President Johnson, for that plus other things.

Also we inaugurated an environmental program of sorts long before the environmental laws. We had begun to realize that our new lakes were public places and should be well kept. We started a beautification program that was very successful. For those project operators who didn't do too well, we gave them a hoe and a shovel at the annual picnic. The others were complimented. That program preceded "Keep America Beautiful."

I felt also that the public should have a safe and pleasant experience at their projects, so we began to erect information signs and to build places and special facilities for handicapped people, long before there was a handicapped program. A study group looked for similar improvements not only for the people but also for fish, wildlife, et cetera.

We insisted that the chief of the Operations Division, Bob Hunter, a Normandy Invasion veteran, be present during construction inspections. I wanted him to discuss with the construction and the engineering people how the building looked in light of his having to operate it. After all, that's what counts. Well, it took a little while, but we managed to integrate operational considerations into engineering and construction planning and execution. This approach was a small example of today's "partnering" between the owner and the engineer and the builder.

Along this line, we soon learned we had to be more selective in appointing project operation managers. The fellow who supervised the construction would often become the project manager when the product became operational. We soon learned that often did not work too well. The reason was simple. Some people can do both, but too often the construction manager's main occupation and concerns dealt with the engineering and construction mentality. The man that operates a project, besides keeping everything working and maintained, has a day-to-day need for meeting and dealing with the public, so he has to have a different philosophy than the builder has.

The growing need to pay considerable attention to the operational phase was not peculiar to Tulsa District. It was a Corpswide requirement as many projects became operational.

Another lesson learned from a highly visible public works program was the impact of personal interaction with the public, both officially and as part of your personal family's lifestyle. Doesn't have to be, but should be. My children, both John and Susan, went to school in the public schools in Oklahoma at Tulsa.

Susan became very much interested in her riding. She worked at a stable with the children of some of the community leaders. I became chairman of the building committee for a new church and served on the Indian Nations Council for the Boy Scouts. We became part of the city of Tulsa, Oklahoma. We were given honorary membership in Southern Hills Country Club, which meant that, although we paid our expenses, we were allowed to use the facilities.

Politically, as district engineer, I frequently visited the governors. Governor Bellmon and I flew a reconnaissance of the whole district area. Besides seeing the governor and the congressmen at least once a year, I was on television frequently, and district activities were in the newspaper constantly.

I don't know how important this is to the interview, but to me, public and community relations are critically important. As part of the salt study, we were considering a dam site near Buffalo, in the panhandle of Oklahoma. I went there one day with Myron DeGeer. The rancher we visited was named Selman, and I have never been so coldly received. I mean, he was very, very distant. Come to find out that he was living out there because the Corps of Engineers had bought out his father for a dam in eastern Oklahoma. His family moved that far to get away from the "damned Corps of Engineers."



Susan Morris became interested in riding while the Morris family lived in Tulsa. She is shown riding "Stormy," a polo pony from the Tulsa Polo Club.

As I put my briefcase down on the ground, his dog came over and sprayed it. Selman said, "Colonel, that's what we think of you out here in Buffalo, Oklahoma." Our visit was brief but sufficient to explain our purpose before we were on our way to Hutchinson, Kansas. We were going to go up there to look at another dam site. As we arrived in town there was a big sign in the middle of the street, "Corps of Engineers meeting at 2 o'clock in the schoolhouse." Selman had called ahead. We had not planned a meeting but I was trapped. The schoolhouse was full of people who kept me there until 5:30, asking questions about this project.

Finally, I said to the people, "We better close this off. I am very thirsty and really feel that I'd like to get something cold to drink." Soon thereafter as we're driving out of town we noticed on the side of the road, underneath a big cottonwood tree, Selman in his pickup truck and a sixpack of cold beer on the hood.

Now that's, I think, an interesting story, but as Paul Harvey says, "Here's the rest of the story." In 1977, twelve years later, I received a phone call in OCE. My secretary said, "There's a man named Selman from Oklahoma on the phone."

I said, "It can't be."

Well, it was. It was the same man. He said, "Colonel"—by now I'm the Chief of Engineers—he said, "Colonel, are you still interested in this project?"

I said, "Yes, I think the Corps is still interested."

He asked if I would come out there and help them. He said, "I'll support this project, but we've got some problems too."

Tony Smith was the district engineer. I called him on the phone and told him I had to go out to Buffalo, Oklahoma, to see Mr. Selman and asked him if he would come along but that he did not have to come. So we met with Selman and his wife. He and Smith then worked together but, as mentioned, the salt study and his project never proceeded. Even so, an enemy became a friend. Maybe the dog had more to do with it than anything else.

I could go on and on about these kinds of tales. One night at a meeting in Guthrie, Oklahoma, on the Optima project, I was supposed to be in the audience and ended up answering questions for about three hours.

During the groundbreaking for the state's Arrowhead Lake Recreation Facility on Lake Eufaula in the late summer of 1963, Carl Albert was suddenly called to Washington. We soon learned that he left during the meeting because of the Cuban missile crisis.

On Good Friday, 13 April 1964, I was honored in Oklahoma City at a luncheon by induction into the Cowboy Hall of Fame. That was Friday, the 13th of April, the date of the Alaskan earthquake. Colonel K.T. Sawyer was district engineer in Alaska and needed help. Captain Jack Sullivan and several civilian employees were sent.

The point of these incidents is simply to illustrate the involvement of the district engineers in various aspects of the public scene.



On 12 October 1962, Dana Knight of the Ponca Tribe of Oklahoma made Colonel Morris, the District Engineer of the Tulsa District, an honorary chieftain of the tribe, with the Ponca name Sungah-Zhaba, Mighty Beaver, because of the district's work on the Arkansas River. "Only a mighty beaver," Knight declared, "can conquer the Arkansas River."

Tulsa was a truly special kind of assignment for me and my future. As Goose Bay was to my military construction education, Tulsa was the singular event in developing competence in civil programs. Fortunately, I was able to complete both tours without serious shortcomings or adverse comments which would become part of my performance records.

Q: Let me ask you one question. In the district history, Mr. William Settle mentions establishing area offices as an intermediate layer—

A: Correct.

Q: Could you talk a little bit about that and your management philosophy?

A: Basically, we had so many projects that I just couldn't centralize in Tulsa all decisions above project level. So we set up area offices, both for the construction and the operations phases. For example, the Little River project was some distance from Tulsa, so we had an area office in DeQueen, Arkansas, including a real estate suboffice. When we had four or five jobs under construction in the same general area, the most senior of the project managers would be designated area engineer. We wouldn't

necessarily staff it completely. For example, Bill Boland, who was the outstanding project manager of the Eufaula project, was assigned extra staff and an assistant, so he was able to go around his area.

The area engineers were responsible for construction and operations. Field engineering was limited intentionally. Planning and claims issues were kept in the district office. As mentioned, I handled claims myself after the staff did the groundwork, such as estimating and evaluating alternatives. The area engineer was called in as needed, but I often didn't bother him unless I had questions. They had already commented during field negotiations and change processing.

Frequently the resident engineer had developed a firm, often hard, position. Otherwise you probably wouldn't have a claim, would you? I didn't see any point in bringing that atmosphere into the discussions at the higher level unless needed for technical reasons. All it did was dirty the nest a little, cloud the issue. I always believed the contractor should be paid for what he did if it was of value and the government used it. The Corps was not in the business of "breaking" contractors, and, besides, everyone profited if management devoted its talents to project progress rather than tedious and expensive arguments and claim procedures. The philosophy used in Tulsa was expounded from 1972 to 1980 for the entire Corps, a philosophy the Corps needs to follow today and every day.

This leads me to what I fear to be among the most serious problems the Corps faces today: the new procurement officer arrangement. The district engineer should keep the contracting officer responsibility. He knows the work and has the experience to settle these things properly. That's where it should be settled. There's no reason to have a specialist handle construction contracts as is the case with major weapons systems procurements. Besides, the district engineer's position needs to be clear and strong to the customer. It will not be so if he is not the contracting officer.

Tulsa didn't have dam failures or serious engineer problems; however, Waco Dam's failure, in the Fort Worth District area, reverberated throughout Tulsa and other districts having a certain type of soil. Also, we had very few accidents. As indicated, real estate was one of the more difficult management challenges.

First off, just the fact of taking land from people is tough even though they may support the project. Those willing to sell got a good price, but land taking is a touchy issue which was compounded in Oklahoma because of the underground oil. You buy surface rights but rarely mineral rights. This matter was even further complicated in Oklahoma because of the Indians. Dealing with the Indian councils and



Colonel Morris in Western riding gear at an equestrian facility while he was district engineer in Tulsa, Oklahoma.

nations made the real estate problem in Tulsa very complex. The great success of our overall program has to be credited to Dave Helms because of the way he handled real estate matters.

We also helped change some of the contract provisions. Of course, Manning Seltzer, General Counsel, OCE, gets principal credit, but it was Tulsa District that recognized early the impact of changes in *civil* contracts, not only on the work that was changed but, in many cases, items that were not yet completed. Out of that came a significant modification to the changes clause of civil contracts which allowed compensation for the impact of a change on work not yet completed.

Q: The Tulsa District history also says that you had a pretty large role to play at locating the head of navigation for the project.

A: True. Let's see if I can put that all together. The project was designed for the navigation channel to leave the Arkansas River at Muskogee, Oklahoma, move up the Verdigris River through three locks to Catoosa, 12 miles west of Tulsa. Near Catoosa the Verdigris River passes under two I-40 bridges and a railroad bridge, as I recall. The original project had the head of navigation downstream of all three.

Colonel "Babe" Wilson, the head of the ABDA, came to me one day and indicated we had a "head-of-navigation" issue. He said, "It's in the wrong place."

He was right, for we shouldn't end the project immediately behind a major obstacle, especially since operating efficiency would be constrained in that particular location. Also, we still had in mind going to Wichita someday, and there was no point in starting off a new project with a major issue and costs of passing these bridges if we could legally and reasonably include a correction into the ongoing project. Such philosophy, incidentally, would have been beneficial to the Missouri River project, as I was to learn later.

Our studies indicated we could eliminate one of the three locks and its dam on the Verdigris River and save enough money to pay for this extension, which we did. Locating the head of navigation above the bridges was approved. In spite of some troubles which we were able to resolve, the Port of Catoosa now has a more efficient arrangement.

Another interesting vignette about the Tulsa experience involved the completion and dedication of Oolagah Dam in 1962. General Wilson and the governor were present, and it was hot, just terrible. Gerry and our two children attended. The officers wore white uniforms which soon became completely soaked from perspiration. I wondered why in the world we didn't have air-conditioned cars. The reason was simply that the maximum cost allowed for a car in 1962 was \$1,200. Well, \$1,200 would buy you a car, but it wouldn't buy you an air-conditioned car. I soon noticed that trucks had air conditioning and then discovered that the \$1,200 rule didn't apply to trucks—it only applied to automobiles.

So the question was, "What was an automobile and what was a truck?" Come to find out, a four-wheel-drive vehicle was a truck. Well, Jeep had introduced the Wagoneer, a four-wheel-drive station-wagon type of vehicle, so I ordered ten Wagoneers with air conditioning. My procurement people didn't do it right. Instead of buying the vehicles with the air conditioning installed, they bought the vehicles and the air conditioners as separate items. Would you believe that in all the work he had to do, General Dunn noted the procurement of the air conditioners. He phoned me one day and asked why in the world was I buying ten air conditioners for vehicles.

I said, "Well, I'm going to put them in those trucks."

So he said, "What are you talking about?"

I went through the whole thing. He said, "Okay." That's how the Corps of Engineers obtained its first air-conditioned office vehicles.

Tulsa was possibly the Morris family's favorite career place and job. We still have many friends. I had an opportunity after I retired to spend a lot of time in Tulsa. When our son John was married, the minister of our church in Tulsa came to St. Louis to perform the service. If John had a problem when he was stationed in the Middle West, he'd go to Tulsa and see Father Richard Daniels. Susan communicated for years with some of her Tulsa friends. It was a highlight of our life, personally as well as professionally.

Q: I interviewed several generals who said that the district engineer's job is the best job to have.

A: I think so too. When you leave it, you are sure to have the "ex-district engineer syndrome."

Q: Looking back on your military career as you left Tulsa, how would you characterize it?

A: Leaving Tulsa in the summer of 1965 was the tenth anniversary of my going to Goose Bay, Labrador. That decade probably was the most critical in my development because of the assignments and the people with whom I was associated. At Goose Bay, you recall, I was the resident engineer on a tough military construction job under a very strong-minded boss with whom I couldn't communicate easily. The weather didn't help either. That was the first time I had been in a responsible position dealing with a very complex construction problem, a cost-plus type contract and a client, the air base commanding general, who was very demanding of engineers—a broadening experience and an education in understanding the construction processes and in future planning of the work to maximize the brief outdoor construction period. Certainly the Goose Bay job increased my understanding of and self-confidence in executing complex contracts.

The OCE personnel assignment was a complete change of pace—to staff duty from command. I became associated with the then current and the future leadership of the Corps. Assignment of Corps officers develops compassion and a willingness to understand the problems of individual officers and their families while being responsible for their education and development.

Korea, as a commander of the Army's top divisional combat battalion in an outpost situation, followed by schooling at the Army War College, refreshed my understanding of the military organization and role of the combat engineer and broadened my knowledge of national strategy. These two years provided my initial association with personnel from other nations, other services, and the Department of State. Next came the Tulsa District and total immersion in the civil works program with all the political, planning, and engineering implications that go with it, particularly contract management.

So those four or five assignments covering a ten-year period gave me the background to assume any job within the Corps and many positions within the Department of Defense or even in the political arena. So that was an important period when looked at collectively because it exposed me to most of the responsibilities an engineer officer is supposed to understand—troops, personnel management, military construction, public works, and Department of the Army level staff.

West Point

A: Upon my departure from Tulsa the "ex-district engineer syndrome" set in immediately as we reported to the Military Academy at West Point for duty in the Department of Tactics. Until this time we had never lived on an Army post except while in school. Gerry had reached the point of believing we never would.

Q: How did you get your assignment at the Military Academy?

A: Bob Tarbox, Colonel Tarbox, an engineer colonel that I knew well from my days as a cadet and again in Guam in WW II, was a regimental commander at West Point. While still at Tulsa, I wrote him a letter and asked him if there were any possibility I could be selected to replace him in the summer of 1965. The dean was General Johnny Jannarone, whom I knew and who had been in Tulsa. The superintendent was General James Lampert, an engineer general. Tarbox said he didn't think it was possible because they were not going to have successive engineers as regimental commanders at West Point. General Mike Davison was the commandant and indicated he'd prefer someone else.

General Lampert apparently concluded that I should come to West Point even if I didn't go to the Tactical Department. As luck would have it, the Military Academy was to be expanded from 2,800 to 4,400 cadets to make it comparable to the Naval Academy in size. That meant the corps of cadets would expand to four regiments of cadets, and thus two new regimental commanders were needed. I was then selected to be the first commander of the new Third Regiment. On arrival, we were given temporary quarters on the post while our more permanent quarters were being rehabilitated. We then moved into the same lovely quarters occupied by the Tarboxes. In the meantime, I had commenced my duties at West Point as a "Tac."

Instead of worrying about planning, constructing and operating projects—hundreds of millions of dollars, and all the frustrations of that type of job, I had a very minor budget at West Point, and a very small number of people to work with and oversee. There was a brief feeling of letdown, but I soon realized the importance of dealing with young men in whose hands the future of the Army would soon be placed. Once that was put in perspective, we went about the business of helping America's finest young men develop into military leaders.

After the first year, having gotten the Third Regiment off to a good start—I hope it was good—I was moved up to be deputy commandant. Colonel Gray Wheelock, the deputy commander, had been selected for promotion to brigadier general and transferred. So I moved up to his position. The commandant by then was Brigadier General Richard "Dick" Scott, an armor officer. His military assistant, Captain [Thomas P.] Carney, became a lieutenant general and Deputy Chief of Staff for Personnel. My supporting staff included Major Max Thurman, who later became the Vice Chief of Staff of the Army, the commanding general of Forces Command, the commanding general of U.S. activities during the Panama Christmas event, and also the person primarily responsible for upgrading the



Colonel John W. Morris as a "Tac" at West Point in August 1965.

Army to its excellent status at the end of the 1980s.

In addition to Thurman, my replacement as commander of the Third Regiment was Colonel Alexander Haig. The three colonels heading up the other regiments were also top notch. Of course, the cadets ran the regiments. The officers were there to provide counsel, guidance, military training and discipline, so to speak.

As deputy commandant, my responsibilities were basically overseeing the internal operation of the corps of cadets, scheduling military training, et cetera. I was the point of contact for the chairman of the Cadet Honor Committee. So it was an interesting job, and being close to the cadets we became involved in many pleasant extracurricular activities. Cadets frequently came to our home, and even more frequently their girlfriends stayed with us on weekends. Susan was in her late teens and a student at the University of Connecticut in Storrs. She was home often and increased the cadet traffic at our place.

In 1966, I was responsible for the corps of cadets during the Army–Navy game in Philadelphia. Game day began with rain, which started to clear about 11:00 A.M. The Naval Academy officer in charge and I agreed that all would wear raincoats during the march-in. The Middies appeared with no raincoats. Their raincoats were very small, and when rolled could be put in their pocket. Cadet raincoats were very heavy and you couldn't do that. The Chief of Staff of the Army, with whom I happened to be standing when the Navy started to march in, was obviously concerned, as was I. If the cadets marched in wearing raincoats, it wouldn't look too good for the Army.

The Secretary of the Army was there also. I hustled back to the cadets who were formed outside the stadium and told my deputy, who was Lieutenant Colonel Bob Yerks [he also became a three-star general], that I wanted every cadet to take off his raincoat and pass it to the man behind him and then have the last rank fall out and walk around the stadium and come in the back ramps while the rest of the corps, less one rank, marched into the stadium. The only problem was I'd forgotten that the last rank were all first classmen, upperclassmen, and they certainly weren't going to carry raincoats with all those plebes around, so there was a lot of shuffling in the rear of the companies. It soon settled down.

We marched in without raincoats to the relief of the Secretary and the Chief of Staff of the Army. It was an exciting and risky event. If we'd have planned it, I'm not sure it would have worked; however, it was done spontaneously and came out okay.

Interestingly enough, the biggest problem was getting the raincoats back to their owners. For about half the game, raincoats were flying through the air. I may have forgotten who won the game, but I shall always remember the raincoat problem and the improbable solution.

Being involved with the cadets in activities such as chapel, athletics, academics, and their personal, even social life made ours a full-time, seven-days-a-week task, especially for Gerry, but she thrived on the life at the Academy. Having Susan enrolled in the University of Connecticut and John in Valley Forge Military Academy, after one year at Highland Falls, helped her schedule somewhat.

In the fall of 1966, I was selected to go to the University of Pittsburgh for a course in advanced management which carried with it a two-year service obligation. After finishing the course, I returned to my duties as deputy commandant. In the spring of 1967, General Scott was replaced by Brigadier General Bernie Rogers, classmate and close friend. I was delighted to be working with and for him. In early October 1967, I was very surprised to get the word I was being transferred to Washington. Our three years would have been up in the summer of 1968.

Because of the early sudden move, I went to see General [Donald] Bennett, the superintendent. I indicated I thought it was not the right time to move since my term wasn't up, et cetera. He said

the Chief of Staff of the Army had already approved the move for me to be the deputy chief, Legislative Liaison. My boss was to be Howard Penney, Major General Penney.

That part was fine because Penney had been my predecessor in Tulsa and was an engineer officer, but I still had an uneasy feeling about the move, a feeling without substance as time would prove. General Bennett, superintendent, later claimed credit for my becoming Chief of Engineers, based on letting me go to Legislative Liaison.

Gerry and I bought a house in Arlington. We left John and Susan in the north and arrived in Washington from West Point on 27 November in the middle of a blizzard. We managed to get the furniture into the house the second day. Soon thereafter, I reported to work as the deputy chief, Legislative Liaison, for the Secretary of the Army and the Chief of Staff of the Army.

Q: I wonder if I could interrupt you just briefly on a couple of things about West Point. You were there just as the Vietnam build-up was beginning, the build-up of troops?

A: Yes.

Q: What kind of impact did that have on the cadets?

A: It had quite a bit. Colonel [Alexander] Haig, for example, had been to Vietnam as had many other of the tactical officers. Vietnam was a subject of discussion on the military training side and many of the lecturers that came to West Point talked about Vietnam.

That war would affect me personally as our cadets went off to Vietnam as young officers. Tommy Hayes [West Point, 1966], an outstanding cadet, was the son of Major General Tom Hayes, Corps of Engineers. Thomas Hayes IV, I believe, was deputy cadet brigade commander. Everybody liked him and he was a very strong young man.

He came to see me before branch drawing and asked if I thought his father's being a major general in the Corps should have an effect on his choosing engineers. I told him, "No." He chose the Corps of Engineers, went off to Vietnam and was killed. Very sad.

Cadet [William] Booth, a company commander of F Company, 3d Regiment, graduated in the class of 1966. While in Vietnam, I suggested that [Major] General [John A.B.] Dillard select him as his aide. He did. They were both killed in a helicopter. There are too many memories of similar events involving Vietnam and the cadets during our time at West Point.

There were many, many small things at West Point that were interesting—you could write almost a book. One year a group of cadets stole the Navy goat. Cadet [Thomas] Carhart was the motivator. There'd been an agreement between the superintendents they wouldn't do that sort of thing that year. As deputy commandant, I had to head up the investigation and recommend appropriate disciplinary steps.

There was no question about the fact that they stole the goat. So punishment had to be meted out even though everyone was pleased with the achievement. The punishment, while minor, wasn't too popular with the corps.

As deputy commandant, I also was chairman of the Uniform Committee of nine members, including the chairman. The cadet bathrobe in 1965-66 was a long, heavy bathrobe, for which the Army could no longer get the material. So a short, knee-length bathrobe was selected. A question arose over the color of the single stripe to put on the sleeve. Well, we voted and got three votes for black, three for gold, and three for gray—the USMA colors.

As the committee pondered this problem, a cadet from the parade arrived to put the parade flags in the storage case in the conference room. As he began to leave I said, "Young man, if you were going to put a stripe on your new bathrobe, would you put black, gray, or gold?"

He said, "I'd put gold on."

That's how we got the gold stripe on the bathrobes.

We had a lot of interesting events. I don't think they relate to the interview, but the last June week I was there, one of our officers had some of the cadets' girlfriends stay at his quarters. The night before graduation, the ladies had gone to a party of some kind, and one was very upset with her cadet escort. She came home and she made some comment about her "husband." It's against the rules for cadets to get married. So when reported to me, I called the young cadet in, and he admitted he was married.

I explained to him, his parents, and his girlfriend that when he signed in the previous night he also signed that he was not married. He had lied. The matter was turned over to the Honor Committee, which met quickly. He was found guilty of an honor violation and given a chance to resign as a cadet, which he did. Since he had successfully finished his academics, he still got his diploma, but not a commission.

West Point provides a special human as well as academic experience. My aim was to deal with every cadet as an individual, so we had a policy in my regiment to build on strength—find out what a young man was good at and build on that. There's so much negative up there anyhow, you know, demerits and the plebe system and all. The policy worked.

As a senior colonel I was not going to give any demerits myself. I felt that if I brought a young man in and talked to him, that would be enough unless it was something very serious. That turned out to be a pretty good idea, too, because it gave me a chance to talk to a lot of cadets I otherwise would have just written up on a piece of paper.

My earlier assignment in the career development field was beneficial to this assignment, and also I learned a lot about how an officer is made. As a cadet going through West Point, you see things mostly as they affect you personally, but when you're in an oversight position, you see the whole picture—a broader perspective. It certainly did increase my love and devotion to the Military Academy and bring a better understanding of what it does and does very well.

Historically, 25 to 35 percent of an entering class did not graduate. In the early 1960s, a lot of effort was going into keeping the ones who were leaving. I made a little study and I found out that the losses generally distributed themselves in the lower half, one way or another. I took the position that we shouldn't change the system to keep the lower group when we were going to lose up to 30 percent historically anyhow. A better idea was to get the entrance criteria more precise so that when the young man came in, he was more apt to stay. Certainly in the United States there were 1,100 young men who would stay at West Point if we could find them.

Q: You were in a position to see what cadets chose the Corps of Engineers.

A: Yes. Well, branch drawing was always important. As deputy commandant, I didn't want to be overly pushy about the engineers. Besides, I had learned that whoever came in the Corps would be qualified. It wasn't a matter of getting a winner or a loser, they were all winners, so it's just a question of helping those who were not sure to make up their minds. There were cadet counselors established for each branch.

Q: I wanted to get you to talk a little bit more about the advanced management course. I'm not too familiar with it.

A: Oh, well, there were two or three in the United States at the time. The most prestigious was Harvard. Harvard had a 13-week advanced management course. The one at Pittsburgh was a little shorter. I think it was 10 or 11 weeks. Our course included about 35 students, mostly Americans. These were people who had had a certain amount of senior managerial experience and were on the threshold of corporate executive positions. One purpose of the course was to make them qualified.

It turned out that as a district engineer, I had had more leadership and managerial experience than most individuals in the course. Nevertheless, it was a help to me because I got an insight into the business world and met some outstanding people.

The one thing I came out of that course with was the fact that you need to know yourself. If you don't and you're not honest with yourself, you can't communicate very well. I'll make that clearer. In one exercise, they gave every student a list of 10 or 15 adjectives. Each person rated everyone else in the class against each of these adjectives. Also himself. You kept your own and gave the others to the professor. The professor then passed all the ratings on each person to that individual. The question was, "How did you rate yourself in relation to how others rated you?"

That was an interesting exercise. The man who had been elected class president came out number one on that test. There was no correlation between the two events. The four officers selected for the class officers were in the top four on that test. I've been impressed with that all my life. If a person understands himself, he will be more apt to have people understand or to receive the message he thinks he is sending.

At the least it helps you to be a better communicator. That's the important part. If you communicate with somebody and they don't understand, it's probably your fault. The sender is more at fault than the receiver. People often say, "I told you to do something, why didn't you do it?" Well, you might want to think that over a little bit. Maybe they didn't understand what you told them to do.

Q: So it was pretty select, only a very small number of officers.

A: Yes. When I was in career development I think we sent maybe four or five a year, something like that, out of the Corps. There were a couple of other Army officers at Pittsburgh but no other engineers. Most of the students were nonmilitary.

Legislative Liaison

Q: In November 1967 you came back to Washington as deputy chief, Legislative Liaison.

A: Yes.

Q: How did you feel about that assignment?

A: I liked the assignment. I felt I was fairly well qualified for it because of duty in Savannah and especially Tulsa. Maybe that's how I got the job. That plus Howard Penney. The job was a dual-hatted job. We worked directly for the Secretary of the Army, and also for the Chief of Staff of the Army on legislative matters. I think the chief, Legislative Liaison, is among the more important jobs around the Pentagon. The Legislative Liaison people were seldom out front, but they're always there, giving advice and analyzing congressional attitudes. As I mentioned earlier, I think Howard Penney was the best staff officer I've ever known, and a great teacher.

The key issue during that assignment was Vietnam. As you know, President Johnson was into it deeply. General William Westmoreland was asking for more troops, if you remember. We in

Legislative Liaison had to get the requirement into the right format for presentations to the Congress by the president. We worked night and day on a plan to send some 200,000 soldiers to General Westmoreland as he requested; 19,000 were to be in the advance party. On the 31st of March 1968, President Johnson came on TV, and he announced he was sending in the 19,000. He also said that night he was not going to run for reelection and never mentioned the remaining troops. We sent the 19,000, but we never did send the remainder.

There were frequent political bombshells popping up when you didn't expect them. The Secretary of the Army had a real situation on his hands with the M-16 problem. Bob Jordan, General Counsel for the Army, personally took this project aboard. General Penney and he worked literally weeks and months on that one problem, to try to get it settled down to whether the Army would keep the M-16 rifle. Of course, our rifle manufacturers were all over it because they wanted to make the weapons.

Then little things often got important. The chairman of the Armed Services Committee in the House of Representatives was Mendel Rivers, a dynamic and powerful man from South Carolina. He had a retired marine general as counsel for the committee. Rivers could and did bring pressure on the Secretary of the Army through his committee. He'd call the secretary for a hearing, and if it was a tough subject he'd have the whole committee present.

Roger Courier of our office was a close personal friend of Mr. Rivers and would keep us posted on matters of importance to the chairman and his staffers.

I got a call one day from a certain staffer who said, "You'd better do something about that bag boy situation over at Fort Myer." He said, "The chairman is very interested." The bag boys had become impolite and destructive in filling patrons' bags, but they were part of President Johnson's Youth Improvement Program. These were predominantly minorities, so we had to be careful that we just didn't summarily get them out. Besides that, we didn't know who was going to do the work if they left. Roger Currier checked into it and reported that the chairman was not interested.

Pretty soon I got another phone call from the staffer saying, "What have you done about the bag boys?" I told him we were working on it and I'd get back to him. Well, this time it happened that Currier was going to go to South Carolina with Mr. Rivers. In the meantime, I thought I'd better do something about this. I'd better have a plan. So we got the Army staffers together with representatives of the CG at Fort Myer, and we came up with a plan of what we'd do if necessary.

Roger Currier came back from this trip, said, "Don't worry. I mentioned it to the chairman and he didn't say anything."

About a week later, a letter came floating in signed by Mr. Rivers to the effect that for over four weeks or so nothing had happened, so Secretary [Stanley] Resor was to appear before the full committee on a certain day. Secretary of the Army Resor knew nothing about all this, so I had to explain the whole thing to him. Fortunately, we had a draft letter telling the chairman that by Monday morning the problem would be eliminated. Soldiers would do the bagging for a short period of time while this situation was better resolved.

He sent the letter, but he still had to appear for the hearing. By the time the secretary had arrived, Mr. Rivers had received the letter. The hearing was warm and friendly with accolades for the Secretary of the Army for having been so positive and efficient in solving this problem.

General Penney had let me handle this while he was taking care of other issues. Mr. Resor is a wonderful man. We still get cards from him every year, and I see him occasionally.

Another interesting event occurred before the one I just related. I hadn't been in Washington more than a few days and was told that I would escort to West Point a special investigating committee which was headed up by Congressman [Edward] Hébert. Hébert was number two in the House Armed Services Committee.

The investigation was to consider why Army had turned down a request to play a post-season football game in the Sugar Bowl in New Orleans against Louisiana State University. Mr. Hébert had been instrumental in getting Army invited. When the Chief of Staff of the Army and the secretary decided to decline, the cadets and Mr. Hébert were really upset. I was still at West Point when the turndown occurred, but the investigation started after I got to Washington. I remember the cadets took all the sugar bowls off the table from the dining room in protest for not being able to go to the game in the Sugar Bowl.

Well, anyway, I'd only been gone about a week and I was back up at West Point with this investigation. The congressman made his point, but the Army didn't play in the bowl game, either.

The Legislative Liaison job has impact on many activities. On one occasion, the Senate Armed Services Committee was meeting on the authorization bill, and I happened to be outside when the staffer came out and asked if I could help resolve a problem at West Point.

The East Academic Building, a new building to be built at West Point, was about to be axed to save money. The discussion favored cutting back on entrants for a couple of years to delay the need. I drew a little sketch to show that the students who would use that building were already at West Point, and by the time the building was finished they'd be ready to use it.

So he grabbed the sloppy sketch and took it back in the Senate. In about 15 minutes he reported the building was in the bill. That's just how close it was. I've seen this gentleman two or three times since then, and he always remarks on how that East Academic Building at West Point was saved. Legislative Liaison was an important job. You soon learn that at that level facts and accuracy are crucial—guesses are dangerous.

Q: You were heavily involved in the funeral arrangements for Robert Kennedy, weren't you?

A: Yes. Whenever a senior Executive Branch official is to be buried, one of the services will be designated to manage the congressional delegation that goes to the funeral. When Robert F. Kennedy was assassinated, that project was assigned to the Army even though the Kennedys were Navy people.

Because Mr. Kennedy was running for president, he had a large political campaign staff. Of course they became involved with everything, and the situation became confused. Besides that, the funeral services were to be in Saint Patrick's Cathedral in New York, and the interment in Arlington Cemetery, Virginia.

General Penney decided he would stay in Washington and take care of the situation here, particularly the event at the Arlington Cemetery, and receive the cortege when it came from New York on the train. I was to go to New York where my first stop was at the "Kennedy for President" headquarters. That was a real madhouse, and I was getting nowhere. I wasn't able to find anybody to talk to. It may have been orderly to somebody, but it wasn't to me.

Finally, I saw a familiar face which I recalled from the dedication of the Eufaula Dam in Oklahoma. He, a Mr. Bruno, also recalled the event, so I explained that I had about 200 members of the Congress of the United States and their wives coming to the funeral, and my responsibility was to get them into Saint Patrick's Cathedral and seated as a group.

He suggested I go to the cathedral and rope off a section. Some advice! My big problem became getting a piece of rope. At Saint Patrick's Cathedral I met a member of the church staff, and I told him what I needed. So I roped off a section of enough seats and went on my way.

Well, this had taken pretty much the day. Next, I arranged for five buses to bring the delegation from the airport and soon realized I had another big problem—where to park them near the cathedral. Around 10 o'clock at night I called Mayor John Lindsay's office. He was there, it turned out, and I was passed to the chief of police. I was told to get a piece of rope and block off five spaces on 51st Street, which is alongside Saint Patrick's. So I did the rope trick again.

We finally got the congressmen and their wives into the church and everything went fine. The members of Congress thought it was well planned! All reserved areas remained intact, and the members of Congress and their spouses were seated without incident.

Finally, the service was over—a very emotional service, if you recall. Originally, I had planned to come back on the train, but I decided I would fly back down to Washington to help General Penney get ready for the interment.

When we were ready to board the airplane, Senator [Howard] Cannon, Nevada, a major general in the Air Force Reserve, was absent. Senator [Everett] Dirksen, Senator McClellan, and their wives were hot and perspiring. So we decided to depart and have Senator Cannon follow in the standby aircraft.

Once we landed at Andrews and the congressional people were on their way to town, I waited until the second plane arrived with Senator Cannon aboard to explain that I regretted leaving him but we couldn't wait any longer in New York. He was satisfied with the decision and indicated he would have been embarrassed if the group had had to wait for him.

I'm sure you recall that the train bringing the body struck a boy in New Jersey and was delayed about six hours. Instead of getting to D.C. around 4:30 P.M. or 5:00 P.M., it was about 11:00 P.M.

In the meantime, we had to change our plans from a daytime to a nighttime interment. Consequently, we needed hundreds of candles. Well, where do you find so many candles after 6:00 P.M.? Finally, I called the cathedral, and with their help and others we were able to round up enough candles. The hot, rainy, damp night plus the emotional situation caused several people to faint. General Penney and I each carried ammonia capsules for those who needed them.

In the summer of 1968, Mr. [Ralph] Abernathy and his Freedom Marchers and also Mr. [César] Chávez and the lettuce and vegetable people from California were in town. Requests came from Chávez and from Abernathy to bring their people to the grave site. They were accommodated.

As it happened, the Penneys weeks earlier had scheduled a party that night. We finally got to his house at 1 o'clock in the morning. Everybody was gone except Gerry and his wife.

Well, that was the Legislative Liaison, except for one other event. I had been a colonel by then seven years and, having missed a couple of opportunities to be a general, I figured I wasn't going to make it.

I had not been looking for a job, but sometime in February 1968, Bob Kerr, Senator Kerr's oldest son, came to see me and asked me if I would like to be the director of the Kerr Foundation out in Oklahoma. Don McBride, my old friend, had come along, and I told them I was very interested. I also explained, because I'd gone to the University of Pittsburgh, I had a commitment to remain in service for two years or until October 1968. Bob said fine.

In March 1968, Howard Penney came to me one day and announced that I had been selected for brigadier general. When the brigadier general nomination evolved, I had to decide whether to take

this job in Oklahoma or stay in the Army. I knew I was going to go to Vietnam if I stayed in the Army. Gerry and I discussed the matter, and I told Mr. Kerr I couldn't accept his offer. I stayed in the Pentagon another year after the list came out, till the spring of 1969. Meantime, Penney left and my orders to Vietnam were issued. I told Secretary Resor goodbye. General [Harold K.] Johnson had been replaced by General Westmoreland [as Chief of Staff of the Army]. I was assigned to the 18th Engineer Brigade in Vietnam.

I left to go there in late April and arrived in Saigon on 29 April. Before that, my wife and I had gone to Bermuda for a week holiday. I had told her I'd see her in Hawaii during Christmas 1969, left from Baltimore, and flew on out there. You want to ask any questions about the Legislative Liaison?

Q: Yes, a couple of quick ones. Was this assignment important in terms of your getting more knowledge about Congress, the congressional staff?

A: Yes. It was very important in that regard. I probably should have emphasized that.

In this assignment we dealt with Congress on specific issues, and normally they were adversarial. Either you informed the Congress in advance or the staff became upset because they didn't get the word early. I spent much time with all committees of Congress that had an interest in the Army.

The Legislative Liaison job was very, very challenging. The responsibilities were rather heavy, and I think Howard Penney gave me more freedom than most deputies. During the lull between Penney's leaving and his replacement's coming in, General Westmoreland became Chief of Staff. The following might be a good example of the staff aspects of the office of the chief, Legislative Liaison, during the weekly staff meetings. The Legislative Liaison people sat along the wall and the principal staff members sat at the table. During General Westmoreland's first or second meeting as the Chief of Staff, he indicated he would like to invite all the newly elected congressmen over for an orientation. He asked for the Legislative Liaison person. That was me, so I announced myself. He asked me my thoughts on his plan. I explained that my initial reaction was that it was not too good of an idea because the new congressmen are not as important as the old congressmen. If we were going to brief anybody, we should brief the senior people before the junior, newly elected members.

It turned out that General [Fred] Weyand, who had been director of Legislative Liaison before Penney, was present. General Westmoreland turned to him and said, "Well, Fred, what do you think about this? You used to run Legislative Liaison."

Weyand commented that if we were going to brief somebody, then brief the committee chairmen. Don't start off with the least important people.

Well, that was my introduction to General Westmoreland. He appreciated the comment. The point however is that Legislative Liaison is involved in most routine business of the Army staff. On a daily basis the job took more of my time than any job I ever had. I had little control over my destiny because the issues arose without warning, were so varied, and involved the Army's top leaders. In hindsight, I capsuleize the office of the chief of Legislative Liaison as requiring thorough, accurate analysis of tough issues and the value of taking a clear, firm stand on your views. Your seniors need them.

Q: While you were there, the protest movement against the war began to grow, didn't it?

A: Yes, very much so. In fact, they burned Washington while I was there, but I missed Under Secretary [David] McGiffert's going to the steps of the Pentagon and making his speech.

Vietnam ran through all of the things we were doing. Events like the Robert Kennedy funeral, the bag boys, so forth and so on, those were blips because the mainstream of our business dealt with Vietnam. The Tet Offensive had a major impact on legislative activities.

Q: Did congressmen come to you when there were the riots in Washington after Martin Luther King was assassinated?

A: Not to my recollection. When Martin Luther King was assassinated, I was in Chief of Staff General Johnson's office the moment it came on the TV. It was late in the evening. He was very upset about that and anticipated troubles.

The city was burning, then. My daughter, I remember, came to Washington by plane. I met her, and when she landed she mentioned how terrible it was to see from the air that the capital city of Washington was being torched.

I didn't personally get involved in any of the demonstrations nor with congressional activities.

Q: Are there more things you'd like to talk about with the Legislative Liaison?

A: It was a jewel and a very interesting assignment. It's one of those jobs, again, where you have recurring opportunities to fail. I keep talking about that, but there are a lot of jobs where you don't have a chance to screw up, you're too protected. Not so in Goose Bay, nor in Tulsa, and certainly not in Legislative Liaison. Legislative Liaison was the least protected and the most exposed.

I do want to add a comment about the excellent staff. The ladies that worked in that office really trained the new officers. They were tremendous. Ethel Lamers was just a spectacular person as far as work and understanding were concerned, and she was better than most people will ever be in handling tough politicians.

So it was a good assignment and there was nothing pretentious about it. We had some of the worst offices in the Pentagon. We couldn't go anywhere without going up and down stairs. That was probably about the way it should be because you could never find us. If a visitor wanted to find the chief of Legislative Liaison, he'd need a map or a guide or something. General Penney spent a lot of time with the Chiefs of Staff and with the Secretary of the Army, and so did I.

Finally, upon leaving the Army staff for Vietnam, I had the clear belief that my career development was complete and that whatever success I might have henceforth would depend entirely on how well I had learned the lessons from the assignments I had been given leading to selection for general officer rank. Frankly, I was satisfied at the time that those assignments covered whatever might lie ahead in either engineer or branch-immaterial duty. Still, I was to learn that even 26 years had not fully prepared me for Vietnam, nor for the environmental experiences yet to come.

Before turning to Vietnam, I need to mention that my father had died in January 1969. My mother was a semi-invalid and alone. Also my mother-in-law was ill. Susan was about to graduate from the University of Connecticut. In the summer of 1968 I had sworn in John as a private in the U.S. Army and he had entered the West Point Prep School shortly thereafter. When I left for Vietnam, he was waiting to be accepted for the Academy. If he missed, I would have seen him in Vietnam. Consequently, I had to leave Gerry by herself and also to attempt to settle my father's estate by mail from Southeast Asia. It was not a good time for me to be away, but I doubt there ever is.

Vietnam

Q: You were assigned next to the 18th Engineer Brigade in South Vietnam.

A: Yes. Returning to the military situation. My service in Korea by now was ten years old when I arrived in Vietnam. The U.S. Army, Vietnam, engineer was General Dave Parker whom I've mentioned earlier: Tokyo after World War II, Korea in 1960, and now again in Vietnam. His deputy was Brigadier General Bob Tarbox, whom I'd known in Guam and again at West Point, plus other places along the way.

The 18th Engineer Brigade served the northern half of Vietnam. Our brigade headquarters, the aviation section, and a relatively small number of soldiers, most of them involved with the headquarters operations, were located at Dong Ba Thin near Cam Ranh. The brigade consisted of 16 engineer battalions—combat and construction battalions—and numerous separate companies. They were spread throughout the northern half of South Vietnam, all the way from the DMZ down to the 20th Brigade on a line generally westward from Phan Rang.

Our main missions were to support the combat troops and perform the heavy regional construction. The construction battalions were committed primarily to lines of communication [LOC]. The combat battalions supported by a light equipment company also worked on the LOC unless support of a divisional mission took priority.

In the scheme of things, we had one combat battalion out of the 18th Engineer Brigade in support of each numbered division. The 1st Cavalry Division, the 101st Airborne Division up at Hue, Phu Bai, the 4th Division near Pleiku, the Americal Division at Chu Lai, and a brigade of the 5th Division were located in the 18th Brigade area of operation. In addition, we supported numerous miscellaneous signal and special forces.

Our battalions were self-contained and, generally speaking, were in remote areas. Consequently, we had frequent incidents with the Vietcong and, in some cases, North Vietnamese soldiers. We suffered more casualties than you normally would have expected for engineer units. Our men were very busy, and as a result, we had fewer disciplinary, morale, or drug problems.

As brigade commander, I set goals and then spent much of my time in the helicopter visiting our work sites and also our troop units to keep up to speed on their activities and finding out what we could do to help them.

There were several significant construction projects. One was to build a road out to the A Shau Valley. A reinforced engineer battalion commanded by Colonel Melvin Johnson was in charge of this very difficult task. He did a fine job. When it was finished, General [Richard] Stillwell, who was the commanding general of the XXIV Corps, came out and made a special presentation to our engineers for that excellent work.

The 326th Engineer Battalion [101st Airborne Division] commander was Lieutenant Colonel Henry J. Hatch. General Stillwell's chief of staff was my West Point classmate Bud Bolling. I became fairly close to General Stillwell, a great commander with wonderful leadership qualities. His farewell address to his troops when he was replaced by General Mel Zais was truly inspirational.

The LOC program was the highlight of the construction. I don't recall how many miles we built. General [Frederick] Clarke, Chief of Engineers, had dedicated his brilliance and thoughts to a plan to replace the normal military maintenance system for heavy equipment. As a result, the LOC equipment was the typical yellow U.S. items purchased "off the shelf" and maintained under special contract with a firm headquartered or at least managed out of St. Louis. We had a 24-hour

turnaround on parts. Consequently, what would have been otherwise an impossible equipment maintenance job was effectively executed.

Many of our soldiers, who had no experience building roads, soon learned how to operate asphalt plants, rock quarries, et cetera. We set up, in our brigade area, a number of industrial sites consisting of a quarry, rock-crushing capability, an asphalt plant, and materials needed to build bridges, culverts, et cetera, associated with roads. Usually, these sites were at a construction battalion headquarters. Colonel George Rebh, deputy brigade commander, helped a great deal in developing the concept of these well-planned and efficient industrial sites throughout the brigade area.

The real problem, of course, was keeping the asphalt plants in operation. We improved as we went along, and we surely tried. Still, I don't think we ever were fully efficient, although we did pave a lot of roads. The reasons for paving the roads were multiple. First, better roads allowed our troops to move more efficiently, and the pavement almost eliminated the use of land mines. Until the roads were paved, we had to sweep every road each morning with mine detectors to be sure the Vietcong had placed no mines overnight.

The combat operations consisted mainly of countering night attacks and supporting the combat divisions. We did have noteworthy tactical incidents, however.

The 299th Engineer Battalion, commanded by Lieutenant Colonel Newman Howard, was located between Dak To and Ben Het, west of Pleiku. Ben Het was so close to the border that the enemy was always nearby, destroying or at least interfering with transportation. In early 1970, the South Vietnamese were providing security for a 299th Engineer Battalion convoy en route to Ben Het when attacked by North Vietnamese. We had a couple of people killed and some equipment damaged. Colonel Howard personally got his troops out okay but was very upset with the South Vietnamese security. I remember asking the corps commander to replace the engineer battalion with an infantry battalion. He decided that if we did that, the South Vietnamese would think we didn't have confidence in their ability to protect us.

In a few weeks, the same event recurred and a very tough fight ensued. Again Howard extricated the troops and received the Silver Star for gallantry. His battalion was so badly beaten up by those two events that it had to be moved to the rear [east coast area]. Then it was replaced by an infantry unit.

I do remember the wonderful officers and enlisted personnel. The roster of battalion commanders and group commanders in my brigade sounds like the leadership of the Corps for the next decade. Jack Waggoner, commander of the 45th Group, became a major general. He was replaced by Colonel Carroll LeTellier, later a major general; Harry Griffith was the 35th Group commander, lieutenant general. The 937th, Bob Marshall, later a major general. Hap Adams, Colonel [Carroll E.] Adams [Jr.] who was killed, was a brigadier general promotable.

Then the battalion commanders sounded also like a *Who's Who* list: Hugh Robinson, Sam Kem, John Wall, Ernie Edgar, Jim Donovan, and an S-3 named Art Williams—all future generals.

Command Sergeant Major Santecrose was truly a great NCO. He traveled everywhere I did, and his famous expression to the troops was, "Get with the program." He was a dynamic influence. We each spent over 700 hours that year in a helicopter, going from place to place.

Our chaplain, Lieutenant Colonel Stewart Wetherall, was an inspiration to our troops and was always with our front-line battalions. I remember going with him at Christmastime to every unit and to every person that we could find. As in Korea, the value of religious leadership to soldiers was undeniable.

The holidays were probably the most painful part for the troops, being so far from home under such adverse circumstances. Because General Clarke came to Vietnam near the Christmas holidays, my trip to Hawaii to be with Gerry never happened. I didn't get to see my wife during the tour, but we did communicate by daily letters and frequent tapes.

General Parker was a prime player in my Vietnam experience. He, Carroll Le Tellier, and I were doing a reconnaissance when we ran into a typhoon just off of Da Nang. We had to land our helicopter in the "bowling alley," a flat area where there was continuous enemy activity. We ended up convincing the pilot that we were sitting ducks in the middle of a shooting range. He finally got the helicopter off the ground and up to an artillery outpost called "Los Banyos." The wind was blowing so hard that the pilot said he wouldn't shut down the chopper for fear the wind would ruin the rotor. When the chopper ran out of gas that is exactly what happened.



Secretary of the Army Stanley Resor (left) with Engineer officers Colonel Harry Griffith, Major General David S. Parker, and Brigadier General John W. Morris in South Vietnam in 1970.

We were finally rescued in a half-track by Captain Ronald Bartek [West Point, 1966] to end a wet and miserable day. General Parker, all his life, felt that we almost did him in on that day.

My most vivid memory relates to an event after I left. Prior to departure, I had laid on an orientation program for my successor—General [Henry] Shrader. When he arrived, I soon departed, and after a couple of false starts in Saigon got back to the United States as scheduled

in early May 1970. I'd been in the States about ten days and happened to be in OCE when I was called to see General Clarke. He told me that there'd been a helicopter accident in Vietnam, and he knew that one engineer general officer had been killed. He told me where it was and that he knew it was a major general. It had to be General Jack Dillard, and based on location, I figured the 937th Group and probably the 20th Engineer Battalion commanders were aboard too. I also listed all the people I thought would be on the chopper. Unfortunately, I was correct.

As I recall, 11 people were killed. One survived, Sergeant Major [Robert W.] Elkey, who was the 937th command sergeant major at that time. Elkey was thrown out the chopper, badly wounded and fortunate to survive. Everyone else was killed. A most distressing experience for me because not only did I know everybody but I'd been involved with many being there. Captain Booth [West Point, 1966] had become General Dillard's aide based on my recommendation. I had sent my pilot to the 937th to improve the efficiency of that aviation section, and the co-pilot, CWO Adams, was similarly placed. So while that didn't happen when I was in Vietnam, it was certainly part of my Vietnam experience.

I went to all the funerals that I could. When I first took over the brigade, I wrote to all the wives of the battalion and group commanders and told them that I wanted them to know that we were a close family out there and we were going to look after each other. Further, we didn't want them worrying about us any more than necessary, and to take care of themselves so we wouldn't have to be concerned about them. When I went to Hap Adams' funeral up in West Point I saw his wife, and she said, "Jack, you came home too soon." That was like a stab.

All in all, Vietnam would have been a great deal more pleasant memory had the whole thing turned out better. I look back on Vietnam with very mixed emotions. I went into it in a saddened condition because of my family situation, and I came out of it in a saddened condition because of the helicopter tragedy, but our accomplishments were noteworthy. Relative to the rest of the Army, we were blessed and we did good work. Working with Dave Parker was a real pleasure. I also enjoyed Jack Dillard for the little time I knew him.

My driver, Corporal [William] Comenose, is now a successful businessman in Cleveland and stays in touch. So, unless you have some questions, I don't have too much more to add about Vietnam.

Q: I wanted to ask you about the engineer command structure in Vietnam when you got there. You talked about the battalions and the groups. What was above the 18th?

A: We had the engineer command, U.S. Army Engineer Command, Vietnam, a separate element of the U.S. Army, Vietnam. It was commanded by General David Parker and later General John [Jack] Dillard. They reported to General Westmoreland and General [Creighton] Abrams and worked with their staffs. The engineer section within the headquarters of the U.S. Army, Vietnam, advised the CINC [commander in chief] on engineer matters in his planning, leaving the engineer command to execute the program and oversee the troops.

Q: Was there something called the Engineer Construction Agency, Vietnam, when you were there?

A: Yes. That's USACAV, U.S. Army Construction Agency, Vietnam.

Q: USACAV.

A: If I'm not mistaken, that included people like Morrison Knudsen, J. A. Jones, et cetera and performed major contract construction.

Q: Contractors.

A: Contractors.

Q: So the 18th Brigade was supporting the LOC program?

A: The LOC program was a factor. First, however, was the support of the combat divisions. This was an organizational decision. In other words, a specific combat battalion was aligned with a major troop unit. The 20th Engineer Battalion was designated to support the 4th Infantry Division for example. It was then up to the battalion commander of the 20th to liaise with the engineer battalion commander of the 4th Infantry Division, which happened to be Lieutenant Colonel Vald Heiberg. I would advise the division commander which 18th Brigade battalion was to provide support and that his needs would take priority over anything else. Once arranged, the divisional support plan worked well.

The LOC program took more brigade-level leadership, management, and attention. We met at least weekly to discuss progress, deadlines, equipment needs, supplies, parts, et cetera, and the weather. The monsoons presented unique problems for the engineers. From October through January much work would be lost, equipment and campsites drenched, et cetera and, of course, disruption of LOC completion plans.

Then evening activities occurred. Our headquarters area was secured by a Korean infantry regiment. The Korean regiment was an excellent unit. One night the Vietcong threw satchel charges into the wards at Cam Ranh Hospital. You may remember that. [Lieutenant] General [Charles A.] Cochran was the corps commander, and when I saw him a week or so later, he seemed upset. I didn't know why so I asked him. He felt I had allowed the Vietcong to get into the hospital there.

Although security was a mission of the Korean infantry, I was the senior officer of the area, and therefore he looked to me to do something about it.

I then took over the job and became responsible for the security. It was never ordered or anything, but the Korean regimental commander understood he had to respond to me. As it happened, our brigade camp was hit frequently because we were near the Vietcong trail between the hills and the coast. They'd lob stuff at us, and every time they'd hit us, this Korean colonel would come over with a gift. I had a whole roomful of gifts before it was all over.

The Korean regimental commander, although very conscientious about his work, couldn't keep the Vietcong from firing a couple of rounds at us every couple of nights.

In 1969, the 18th Brigade headquarters didn't have an officers' club or lounge. So the officers got together and built what would be an officers lounge. Really, it was not much bigger than this room we're in now, maybe 20 by 10 or 15.

Anyhow, the night we opened it, we invited some local friends to come over in the afternoon to christen this club. Well, I guess the Vietcong were upset because they were not invited. We no sooner got in the club than they whammed one right in on top of us. Fortunately they didn't have very good aim, but the club was a very nervous place to be for the next couple of weeks.

Occasionally I would go to Saigon to meetings with General Parker. I'd stay with him in his hutch, his place. The 20th Brigade was commanded by Hal Parfitt, General Parfitt. His sergeant major was Van Autreve, whom I mentioned earlier as a first sergeant in the 8th Engineers when I was the battalion commander in Korea some years earlier. The 20th Brigade was later commanded by Ed O'Donald, Brigadier General O'Donald, who would replace me in Omaha in a few years.

The 18th and 20th were competitors to see who could build the most roads. O'Donald's program was to build one kilometer of road a day—"A Klick a Day." The 18th worked on a monthly, not

a daily basis. Our program was called "Operation Last Chance" because the troop drawdown had begun. We were soon to lose two battalions [the 70th and the 116th], so this was our last chance to get the LOC working.

To kick off "Operation Last Chance" we took time to get our plants, supplies, and equipment in good shape. Then we went to work. I don't remember the mileage or anything, but the results were many miles of good roads in record time.

Jim Donovan came up with a plan to use cold mix which could be stockpiled for use as a base course. When needed it could be spread cold and compacted. It wasn't bad. In fact, it was quite good, and we could place a lot more pavement in the same length of time. An innovative idea that paid off. Cold mix also deterred mining once spread and compacted on the roadway. By the time we left, I estimate we had finished about 80 percent of the roads that we were to build.

When I left, General Jack Dillard got me to Tan Son Nhut where I boarded the airplane. All aboard the plane were cheering getting ready to leave. We taxied down the runway when the plane stopped, turned around and went back. We thought, "This can't be happening to us." I don't remember now why it went back, but it was a minor problem, fixed, and away we went. That was the end of that. Next stop USA at BWI [Baltimore-Washington International].

On the personal side, everybody was entitled to two weeks off, and it was important to take the two weeks because of the pressures. As I mentioned, we suffered more casualties than any other unit in Vietnam for 3 of the 12 months I was there.

My cousin from California wrote a letter saying she and her husband were going to be in Hong Kong 20 November 1969 and asked if I could come and spend the weekend with them. Well, that was some idea. I mean, right here in the middle of the war to take off for a weekend to Hong Kong! I had enough notice and the more I thought about it, the more it seemed like a good idea. So I did that. We spent several nice days together. It was short, but I was there long enough to get into the oriental rug business. The Star Ferry Terminal, Kowloon, contained many shops, one of which sold oriental rugs. So I picked out three rugs, and I told him I'd come get those later. A month or so later I used another four days, returned to Hong Kong, and then I really got into the rug business.

Another officer in the battalion and I went to Australia and used my last week. The trip was so nice Gerry and I went back some years later.

I had used my 14 days, and except for one Sunday, there were no other days off. On that Sunday afternoon General Parker and I and some others went snorkeling in the South China Sea off of Na Trang. I don't remember another single day we didn't work. For recreation we played volleyball in combat boots in the evenings. One of our players, Captain Joe Ballard, later commanded the 18th Brigade in Europe and Fort Leonard Wood as a major general and is now Chief of Engineers.

Q: You said you wanted to go back to Nixon's beginning to withdraw troops in June 1969.

A: Thank you. One unit worth noting was the 116th Engineer Combat Battalion from Idaho. I think it was the only National Guard engineer battalion in Vietnam, and it was an outstanding battalion. They were located on the far western edge of the brigade area at Bao Loc.

They had their own little group of Vietcong that messed around with them at first. Those engineers were excellent shots, and during the first couple of attacks they knocked off a bunch of Vietcong. That cooled down the situation, and they weren't bothered too much. Also their equipment deadline rate was fantastic, I mean, like 2 or 4 percent, which was unheard of in Vietnam. Discipline was good. The battalion commander was sharp. I can only say nice things

about it. They were the first battalion to stand down. The next was the 70th. Colonel Jim Hays had that battalion, and he shows up later in the Israeli airfield business.

We replaced the 169th at Bao Loc with the 116th Engineer Battalion, which had been beaten up very badly over on the east coast north of Qui Nhon. The Vietcong must have watched the 169th leave because the 116th was in trouble the whole time they were at Bao Loc. They never could get the enemy straightened out like the 169th did.

Q: At the outset, was the engineer withdrawal taken mostly out of the LOC effort?

A: These were both combat battalions. The LOC effort survived the drawdown longer.

Q: I know that deadlined equipment and getting parts had been a problem.

A: It had been a problem, but there are books written on this thing that are much more detailed. The one thing I know is that the LOC system worked quite well. If we had a piece of equipment go down, we had an instant replacement. Now, if it had been military-issued equipment, we would not have had that luxury. General Clarke convinced the Army not to do the LOC work with ordinary military equipment and he was on target.

Q: Were you involved at all with the Vietnamization program?

A: Yes. That's why the 299th got in trouble. Yes, we had a lot to do with the Vietnamization program. The brigade supported the advisory groups, local mayors, and district leaders. Of course, the 299th got in trouble because the Vietnamese security left the scene of battle when the fighting started. The Vietnamization program ultimately fell to the enemy.

Strangely enough, the North Vietnamese Army came the same route more or less that trapped the French near Dien Bien Phu which was in the 18th Brigade area. The Vietnamization program was all right in concept, I think. It had a chance, but it didn't work. Something failed because of poor leadership at the national senior Army levels.

Q: What was the state of the Vietnamese engineer units?

A: We tried very hard to integrate them into our work, and I would say they were weak, basically. The equipment was tough for them. We were training them on the equipment. I don't recall now any Vietnamese engineer unit building roads, for example, of the type we were building. I don't recall them being involved with the LOC program during my tour—maybe later. We did have cooperative projects—bridges and things like that—particularly secondary roads.

Q: They had difficulty recruiting good caliber officers, didn't they?

A: I don't remember that. I remember that some of the Vietnam divisions were led by some outstanding generals. General Stillwell, General Zais after him, were very high on the Vietnamese First Division commander. The battalion commanders were all right. I don't have any recollection of any problems with the Vietnamese engineers. We didn't work with them as much as you might have thought. I remember visiting the Vietnamese engineer group's battalion commanders and having them to our place for meetings. Coordination was ongoing. It's possible that there were missions that I just don't recall. All of our battalion and group commanders kept close contact with the Vietnamese units in their areas. My feeling today is there wasn't enough time to do good training before transition.

Q: You mentioned one other topic earlier, and I wondered if you might want to expand on it. I find it very interesting. You said that the engineer units didn't have the morale problems or the drug problems that some other units had.

A: I can remember spotty drug problems, mostly marijuana. I emphasize spotty because our soldiers were busy and at night went to bed. Nothing like the problems we had in World War II with the poor attitude in my 2d Battalion. As mentioned, we had very good officers all the way through the system, and we had conscientious enlisted personnel. As time went on, the noncommissioned officers became weaker because replacements didn't have the experience. I just feel that the secret to the 18th Engineer Brigade's morale and discipline situation was the fact that we had a clear mission, were organized to do it, and worked hard at it. The worst thing for a soldier is to have nothing to do, particularly if he's in a foxhole.

Q: What about the one-year tour?

A: It created leadership and performance problems. It was hard to retrain our combat efficiency every year. It was not a good scenario. The whole war was not well structured, as I look back on it. The one-year tour was part of the problem. I don't know of anybody that liked the one-year tour except the individual when his tour was over.

To summarize the Vietnam experience into just a compact thought, some things came to my mind. One was we really needed to do something about the Army. Regardless of the sentiment about the Vietnam War or the way it was done, our Army wasn't as good as it should have been.

Also, I learned again the importance of leadership of the troops and the value of remembering families, even though remote. I think the letter I wrote to the families was valuable. Another was



A reunion of former commanders of the 18th Engineer Brigade held in 1972. Left to right, MG William Roper, MG John W. Morris, MG John Elder, MG Andrew Rollins, MG Charles Duke (Ret.), MG Robert R. Ploger, and MG Henry Shrader.

the outstanding people with whom I became associated, the officers especially. The 18th Brigade was blessed not only with a good mission but with good people to achieve it. I have always had great respect for the enlisted people, but in Vietnam I was particularly saddened that the soldiers caught so much adverse criticism when they came home after they had survived some terrible circumstances—the weather, climate, the environment, and, of course, the Vietcong and North Vietnamese Army.

So Vietnam didn't add a totally new experience in the same sense that Legislative Liaison, Tulsa, and Goose Bay had, but it did bring me up to speed on the military side and it restored my understanding of the Army at an important time. I think it laid the foundation on which to shape an improved Army and Army engineers.

Of all the things that happened, the one thing that will always be paramount in my memory is that terrible helicopter event. The only reason General Shrader didn't go was because he was in the middle of his orientation when General Abrams directed General Dillard to recon this road. I assume the decision was to have Shrader continue his orientation. Otherwise, he'd have been on that chopper too. If I'd been over there, we'd have had a very tough situation because the pilot, for whom I had the greatest respect, had recommended they not fly it because of heavy fire the previous day.

I probably would have sided with the pilot. Then General Dillard and I probably would have been opposing each other. I also understand the pilot asked to go high, and General Dillard indicated he had to go low to see what was down there. So where I would have fit into that if I'd stayed, I don't know. Anyhow, that was a very painful event which has left an indelible mark. Tragically, the recon was for naught in any case. A real waste.

In hindsight I consider Vietnam basically a utilization experience, which challenged my leadership capabilities learned and developed over 25 years. I owed the troops and our mission my best. To a lesser degree it was a learning milestone which would be valuable in follow-on assignments. Of course, combat experience is important for a soldier's record. Did it make any difference in my performance over the next ten years? I am not sure, but I sincerely hope my presence was of some value to those with whom I served in the 18th Brigade. Certainly, their value to me was immeasurable and proved irreplaceable from 1970 to 1980.

Missouri River Division

Q: In the summer of 1970 you left Vietnam and came back as division engineer of the Missouri River Division [MRD]. When did you learn about that assignment?

A: I first heard that I was going to the Missouri River Division while still in Vietnam. General Clarke made a second visit in the spring of 1970 and indicated he was thinking about sending me to Missouri River Division when I returned.

I had been promoted to brigadier general in August 1969 after waiting since March 1968. I would report to MRD as a brigadier general. The Missouri River Division had been a dynamic leadership-type activity for many, many years, particularly during General Pick's tour, the Pick-Sloan plan, and the construction of the Missouri River projects. By 1970, the amount of work had decreased, and my impression, while still in Vietnam, was that the Missouri River Division wasn't very busy. However, to be assigned to a division was my personal ambition at the time, and I was sure General Clarke had made the decision for good reasons, so I didn't question it, even though I felt that I was not going to be as busy as I might have been in a different division. That proved, incidentally, to be wrong. Thankfully or fortunately. On returning to the

States, John was a cadet at the Military Academy, having entered in the summer of 1969, shortly after I went to Vietnam. Our daughter was graduating from the University of Connecticut and going to work as a teacher in Northern Virginia. So the move to Omaha involved only my wife and myself, basically. We acquired a new automobile and drove from Arlington to Omaha and rented a flat on the ninth floor of an apartment building. Susan moved into our home in Arlington with much of our furniture, so the move was easy, and we were able to get to Omaha and be ready to go to work in short order.

On arriving, I was surprised to find that the morale of the division was quite low and that there wasn't much enthusiasm at that time. For many years the Missouri River Division had been a very popular federal activity in Omaha and throughout the region, particularly because of its public works program in the Missouri River Basin. In many ways the division had become a nonentity; it wasn't very active in civic affairs, et cetera, at that time and rarely received much attention publicly.

The Corps did have a lot of friends there, however, and the family and I were welcomed to Omaha warmly. We were beginning to get ourselves well established when the need to reinvigorate the morale and enthusiasm of the personnel in the division became obvious. That meant identifying the problem which, as it turned out, was not so much the lack of work but the general abuse and criticism that was being heaped on the Corps as a result of the National Environmental Policy Act [NEPA] which had been passed only a couple of months before my assignment in the Missouri River Division began. It did not take very long to realize that the most important concern during my period at the division was going to be the environment.

Those of us who were in positions of responsibility in the 1970 decade learned that the environmental movement impacted seriously on every phase of the Corps of Engineers' activities. We found ourselves trying to catch up with a law that had been passed with no grandfathering aspects. Consequently, every project we had under construction or even in operation, for that matter, was, in some measure, not in compliance with the law.

The Corps and the nation were fortunate that General Clarke was the Chief of Engineers at that time. One of the first things I had to do as new division engineer was attend a course of instruction in environmental matters at Aspen, along with General Clarke and others. The course was titled the Seminar on the Environment and Sciences. The program was run by a lady named Betty Willard. It was a very good course which gave an insight into the environmental philosophy and did make a significant impact.

When I got to Aspen, Vietnam was still vivid. Vietnam was a place where survival was really the name of the game, and the local people were in distress to just find enough food to stay alive. So naturally I had a difficult time adjusting to some of the impacts of the environmental philosophy on human needs. However, perhaps the reality of Vietnam made the ultimate understanding and respect of environmental objectives more meaningful for me.

In any case, a problem facing Army engineers at that time was the national attitude towards the military in general following the Vietnam situation coupled with the attitude towards engineers in general, which was not very complimentary because of the environmental program. Together, in the part of the United States that was probably most sensitive to environmental objectives, these made for a fairly sporty course for the military engineer.

The real leadership problem, it seemed to me, was how to generate within the Missouri River Division a strong motivation and belief that the work the Corps was doing was good, in the national interest, and one in which we should have pride. To understand the scope of this program, you must realize that the Missouri River Division's civil works boundary included the entire drainage of the Missouri River, also a strong center of environmental activists.



Just back from South Vietnam, General Morris arrived in Omaha, Nebraska, with his wife to assume command of the Missouri River Division in June 1970.

On the military construction side, the area was even larger. It included 11 states and served more major commands than any other division. We had the Strategic Air Command in Omaha, the Military Airlift Command at Scott Air Force Base outside of St. Louis, the North American Air Defense Command [NORAD] at Cheyenne Mountain near Colorado Springs, the Air Force Academy of course, plus a large number of air bases and airfields that had considerable MRD work on them. The Army side included Fort Leonard Wood, Fort Carson, Fort Riley, Fort Leavenworth, numerous ammunition manufacturing plants, and finally, Rocky Mountain Arsenal, which stands alone as a separate problem, which we'll have to discuss. All in all, the Missouri River Division had a full plate of military clients as well as the environmental program, which impacted on both the civil works and military missions although, in the early 1970s, the former to a much greater degree.

So my earlier thoughts that the Missouri River Division wasn't all that busy soon vanished with the understanding that if we did nothing else except bring the procedures and the policies within MRD in line with the Chief of Engineers' environmental objectives, it would be a full assignment.

We had two districts, Omaha District with Colonel Pat Pendergast as district engineer and the Kansas City District with Colonel Andy Anderson, both outstanding district engineers. Each was

placed properly in his job. Also, each was an excellent supporter of the need to adjust the Corps' approach to problem-solving based upon the new environmental policy act. While different, each in his own way was a very strong and decisive district engineer.

As before, I set objectives for the division, and through the division to the districts. That was a procedure I'd adopted years before. In this case, our primary single objective was to implement NEPA. First, however, we had to restore morale and confidence in the district personnel. Next, we had to clean up the projects in the public works program which were taking small amounts of the annual appropriations just to keep them active when prospects of their ever being accomplished were minimal. With a limited program, we needed to concentrate the small amount of funds where project approval and construction were reasonable. So we had those three things—the environment, the internal operation of the division, and the policing up of the civil works program while attending to our military customers' needs.

On the environment, I think the true depth of our problem is evidenced by a story concerning my division and the secretary, Ms. Helen Pierson. Helen had been the secretary to General Pick first in Omaha and later in Washington. She had returned to Omaha after his term as Chief of Engineers. She remained on duty in the federal government as the secretary to a succession of division engineers assigned to MRD. She had seen the Corps from the highest position, and I felt that if anyone had a reason to be proud of what we were doing, it would be Helen Pierson. She was an outstanding secretary and an exceptional helper to me.

In discussions with her, I found that she didn't talk about her job out of the office with her friends because of the adverse criticism the Corps was getting. Once I asked her what she thought about the Corps, what was the discussion around town, and she said, "Well, I don't talk about it." That to me was a fairly good clue that we had problems. I don't think Missouri River was having any more trouble than anyone else. I just think it was the impact of the public outcry against the kind of work the Corps was doing, the tremendous workload that came out of the National Environmental Policy Act, and just a feeling of frustration and uncertainty as to what was going to happen to the traditional Corps work.

So we started an active program of projecting the positive aspects of the Corps' past and the work it was currently doing. A by-product of that was a gimmick which expressed a certain amount of my philosophy about the Corps. I began to look for a slogan to which everyone could relate and hang onto. Out of this came the "The Corps Cares" idea.

Interestingly, I had come up with two slogans, "The Corps Gives a Dam" and "The Corps Cares." I asked Pat Pendergast one day to take a look at those and tell me what he thought. He said, "Well, I like 'The Corps Gives a Damn' but you can't use it because now is not a good time to mention dams even if spelled differently," and so he said, "Take 'The Corps Cares.'" Which we did.

The public affairs officer was Harry Dolphin, and I asked him to get some buttons. Harry looked into the matter and came back with a report that he could get buttons for 10 cents apiece. I bought 250 of them, \$25 for 250 buttons. At a meeting of division employees, plus the two district engineers and their principal staff people, I was wearing one of the "The Corps Cares" buttons. I reviewed the history of the Corps and the Missouri River Division, how much we'd done for the economy and the people, and why we should be proud of our work. I then challenged everyone to help me figure out what was expected of us and then how to do it.

Afterwards, a couple of people asked me where I'd gotten the button and where they could get one. I said, "You can have one if you promise to wear it." So I passed out among the division people a couple of hundred, and I gave Pat Pendergast 25 and Anderson 25 for their folks. Shortly after that, General Clarke had a division engineers conference in Washington where I wore one

of these buttons. The next thing I knew, Frank Camm, division engineer in San Francisco, wanted to know where he could get them. I put up a sign-up list and the button took off. For several years after that, Harry Dolphin was the "The Corps Cares" button procurer. The only thing was everybody had to pay for them. I do believe we must have distributed 5,000 "The Corps Cares" buttons in the first six months or so. In fact, the idea became so popular that General Clarke made it the theme of one of his engineer dinners.

It seemed to make a difference, frankly. I know that was not the only reason, but it was a contributor to what became a different attitude around the Missouri River Division and perhaps throughout the Corps. I know we got a lot of publicity—I knew we'd made it when it became the subject of cartoons, particularly by our artist friend over in Arkansas, whoever he was. You remember that guy? All the fat generals and everything?

Q: George Fisher.

A: He put a "The Corps Cares" button on a fat general. I wasn't so fat in those days so I was sure it wasn't me, but nevertheless, that "The Corps Cares" button came early and it stayed long and I think created an interesting phenomenon. We had a little trouble with the Pentagon, wearing it on a uniform, but we could adjust to that, of course.

Besides the "The Corps Cares" idea, I thought it'd be a good idea to do some internal decoration, and we set up in the hallway of the division office an exhibit from each of the two districts. Kansas City made an excellent piece. So did Omaha, for that matter, with pictures and so forth. We had a third area with prominent previous division engineers including Generals Pick and Sturgis—two Chiefs of Engineers. The visits by the U.S. presidents to the Missouri River Division was displayed because every president beginning with Franklin D. Roosevelt had been there at that time except President [Richard] Nixon, and he came later.

We started publishing news items. As for public civic activities, the Corps of Engineers became active in the College World Series of baseball played in Omaha each year. I pledged the Corps would double its previous year's contribution. That wasn't too hard because they'd only given about \$100 the year before, but we did well enough to be a community leader and were recognized in the paper.

In the meantime, I'd asked the newspaper publisher if he would put somebody on our beat. I knew we were doing a lot of things that deserved some public attention, so Mr. Anderson, of the *Omaha Tribune*, gave us an excellent supportive reporter. As a result, we began to get more news in the paper.

Mayor Leahy was very active. We joined with him to make public areas available for parks and recreation. So all in all, it was sort of a revitalization of what had been, for many, many years, a very close relationship between the Corps team in Omaha and the public, and not only in Omaha but also in Kansas City.

We also visited the governors of the states to discuss their water resource problems, and also we visited the commanders of major military installations. So there was a resurgence of customer interest. I think that plus the "The Corps Cares" thing seemed to turn Omaha into a more dynamic activity. We had some outstanding people in the division and in the district. Omaha District was a strong district and well directed by Pat Pendergast. Omaha was one of the five districts at that time that had military construction. In fact, Omaha had the largest military construction program. Pat Pendergast used to call it the "Super District." Well, it was in many ways. Yet Baltimore, Fort Worth and Mobile were also heavy hitters in those days. Omaha may have had the biggest budget. Kansas City did civil works only.

So far we have covered the first six months or so, a period of effort to get ourselves in a position of confidence to take on the issues before us. There were many.

In spite of the National Environmental Policy Act and everything else, the Missouri River continued to be cantankerous. The controls on it, the reservoirs behind the six dams from Gavins Point up to Fort Peck, did a magnificent job in flood control, hydroelectric power production, and water for irrigation. There were constant problems of local flooding, of getting overdue projects on line, and as mentioned, there was a shortage of funds to do all those things.

Gus Karabatsos was the chief of Planning in Missouri River Division. We discussed how to handle some 110 planning projects for which there was just piddling amounts of money each year. Consequently, no project had enough money to do much. So Gus came up with a program which I called "Put Your Money on the Winners," or "Get Rid of the Dogs." When we started into it, it seemed simple, but we soon realized that these bread-and-butter projects for the members of Congress were important to be kept alive to satisfy their local constituencies.

We were successful in the long run to clean out many projects with no future. Congress several years later took care of the problem on a national basis by passing legislation that dropped inactive projects. I believe our effort in MRD, while painful and tedious, set the pattern. Fortunately, most of our governors and congressional people were supportive because they could see that on a statewide basis they'd be better off having a couple of projects sufficiently funded to produce a needed project as opposed to 15 or 20 so lightly funded that no project planning was completed. That may not seem like a big program, but it was a ground breaker.

The environmental impact statement problem became quite serious because we needed to have one for every project. Our priorities were to start with those projects ready to begin construction, followed by those already under construction, and finally those in operation.

A few projects became landmark—one was Truman Dam. Truman had a potential downstream problem with the paddlefish, an endangered species. Since we had not had time to finish an environmental impact statement, the project was about to be stopped. I was in Manning Seltzer's office, the general counsel of the Corps, when I learned of the stoppage. Manning said we had to have an environmental impact statement or the project was going to be enjoined and stopped. I asked the district engineer to put his best people together in a room and work until they got the thing done. By today's standards, the results would be considered a poor job, but in those days, with the lack of experience and guidance on what made a good EIS [environmental impact statement], he was able to meet the requirement and keep that project going.

Others were stopped for a time, and some of them ultimately were never built because of an inability to satisfy the environmental problem or criticism. The operation of the Missouri River system itself was a complex environmental problem. So the environmental movement, if it did nothing else, kept our planners and our engineers rather busy, catching up with the requirements of the law.

At the same time that was happening, we were discovering some environmental situations which would ultimately require attention in our operations. The bald eagle is an American treasure, of course, and it was an endangered species. Fort Randall Dam's area downstream from the spillway and its stilling basin became an attractive location for the eagles. So we spent a lot of time on the eagle problem. The black-footed ferret was an endangered species and it existed in the Dakotas. We had to attend to that problem.

One day I received a call from our resident engineer in the Rocky Mountain office, which was really under the Omaha District but the district engineer wasn't available. The resident engineer said that two ducks had been found dead on the pond that morning at Rocky Mountain Arsenal.

Well, that did not seem to be a sensational item, and at that time I really didn't appreciate the importance of it. I hope I didn't act too dumb, but it turned out that was the beginning of the Rocky Mountain Arsenal story, which is still going on to some extent. The reason the ducks died was because of migration of hazardous groundwater.

Public meetings became a real challenge for our district engineers. They would try to explain the advantages and the disadvantages of certain flood control projects, such as the one at Boulder and in conjunction with the construction of Chatfield Dam near Omaha. At the same time, we were putting together the project for Bear Creek Dam near Denver. All of those projects came under very careful environmental review.

Through all this, the Corps was slowly but surely changing its way of doing business. Probably the most important thing that happened to the Corps in the environmental program was General Clarke's vision in requiring that we integrate environmental considerations at every point, every step in the decision-making process. That set the Corps apart and later proved to be, I suppose, the single most important organizational concept that was implemented during the early 1970s. The alternative was to have an environmental review committee to review the planning or engineering when finished to see how the effort fit the environmental criteria. General Clarke's idea was to have everybody, at each step along the way, take the environment into consideration, and as a consequence, we put together better projects.

Q: What about the division's military construction work?

A: Rock Island Arsenal was a military project of course. Also, on the military side, we were converting all of our oil-fired heating systems to coal. Very shortly thereafter, for environmental reasons, we put them all back like they were. During my period at Omaha, the oil shortage was the big item.

Another item of major construction throughout the area was either upgrading or retiring each of the ammunition plants. There were 11 ammunition plants throughout the Missouri River Division area. There were serious hazardous materials by-products which had to be attended.

There was also a big program at NORAD: classified work inside the mountain. The Air Force Academy was still being developed—physically, that is. Besides Rocky Mountain, the military did not escape the environmental attention, either. At Fort Carson, for example, there were several environmental protests. Fort Leavenworth and Fort Riley seemed to be relatively quiet.

From the construction standpoint, the big item was housing and barracks. We were trying to provide better housing for our soldiers, and it was during those days that General Danny Raymond, who was chief of Military Construction, came up with the idea of buying off-the-shelf housing rather than designing it ourselves. That was a fine move which led to better housing at less cost for our troops. So the housing program became rather active throughout this period.

Fort Leonard Wood was emerging from the World War II temporary type of construction into a permanent post. General George Walker was commanding general at Fort Leonard Wood.

Q: What about the urban studies? Weren't they part of your time in MRD?

A: One other important civil works event was the birth of the urban studies program in the MRD. Senator [Roman] Hruska, the senior senator from Nebraska, asked me one day if the Corps could help the cities manage the money they were getting from various federal agencies and put it into a sort of a comprehensive development plan.

I thought about it, told Senator Hruska that the Corps could help, but I thought we'd have some difficulty if funds of another federal agency were diverted to the Corps. On the other hand, I

thought that we could be very helpful to the cities in coordinating and integrating the planning of the city from all these various aspects—utilities and flood control, water supply, programs of interest to the Corps, plus transportation and utilities and items which other federal agencies might be financing. So with the cooperation of the city fathers, we began a joint planning group with the other federal agencies and the city. Together, under Corps direction the first “urban studies” was developed. Over the next five or six years we did the same for many cities throughout the United States.

That turned out to be a very important program. The decline in the new project planning workload, as a result of the environmental interest and the lack of interest in pushing for marginal projects, generated a capability among our planning staff. So this urban studies program not only provided valuable assistance to our cities but it did allow us to put our best planners to work on a new mission. The results provided to the communities a product they would not be able to develop themselves. The amount of money which went into the urban studies program was significant.

So that was a new Corpswide mission that came out of a question presented to me by Senator Hruska, one that I think carried with it a great advantage to the Corps.

- Q: Let me go back and ask you a couple of follow-up questions here if I could. Did the Rocky Mountain Arsenal problem become a big one while you were there, or was this one of the first signs of trouble?
- A: That was the first sign of trouble. Actually, we did have a chemical demil project. We built a special furnace to burn small chemical munitions. The chemical demil furnace was already in the works. It wasn't a result of the ducks, but the best answer to your question is that was really the forerunner of what later proved to be a major problem.

The environmental activist community was really centered pretty much around the Denver, Colorado, area. There probably were others, but Denver was, at least, in the forefront. Without any doubt about it, after we got over the first trauma of the National Environmental Policy Act, the Missouri River Division became very serious about doing a good job with the environmental opportunities. We took a lot of heat. I'm sure everyone else did, but we seemed to be the center of the movement. The public hearings were complicated. I think that those two districts and the division as a whole really “got with the program” as CSM Santacrose would have said. Fontenella Park, across the river from Omaha, was a program initiative with environmental phases. The man who ran it had collected data on the development and history of the Missouri River Basin, the river itself. I asked to put an exhibit out there, in which we would show the geological structure. We did it. It was a good public education item and a good public relations item for the Corps.

At Fort Peck in Montana we had an excellent project engineer—Don Beckman. He was a self-made archeologist who collected skeletons of dinosaurs and other prehistoric animals from the reservoir area. He developed a little museum in the project visitors gallery.

- Q: They're still finding things out there?
- A: Still finding things out there.
- Q: I think while you were there, there was some movement or transition in the Missouri Basin Association volunteer organizations—state, local, federal officials.
- A: That would refer to the Water Resources Congress [WRC]. In 1970 there was the Mississippi Valley Association and the River and Harbor Congress. They were combined at a meeting in February of 1971 at the Hilton Hotel on Lake Shore Drive in Chicago. I remember it very well

because the bus from the airport broke down. I had to walk the last mile or so to the hotel in terribly cold weather.

Mike Cassidy, WRC executive director, presided over the meeting which voted to combine the two into the Water Resources Congress.

The local organizations' effectiveness had begun to wane. The Arkansas Basin Development Association, the Missouri Arkansas Basin Association, the Arkansas Basin Association, and others, had all begun to weaken by 1971.

One other event is worth mentioning. I said earlier that we'd had all the presidents out there except President Nixon.

Q: Yes.

A: Kansas City District built Rathburn Dam in Centerville, Kansas. The local sponsoring group were wonderful people with enough political influence to get President Nixon to the dedication. Kansas City District under Colonel Andy Anderson worked with local support and put on a very relaxed affair. I remember telling Andy to get President Nixon to wear a "The Corps Cares" button while he was there. He responded that I should do it.

"No, it's your show, you're the district engineer, so you figure out how you're going to do it."

I told him I'd given President Johnson the treatment down in Eufaula years ago, and I thought it was only right that he should take care of President Nixon. He gave President Nixon the button. So a "The Corps Cares" button got at least as far as the White House. A lot of people at the ceremony were wearing them. That was a nice affair. The picture of President Nixon went on the wall with the rest of the presidents.

Q: What about relations with EPA [Environmental Protection Agency] or with the regional offices?

A: Oh, that is a good point. EPA was authorized in the National Environmental Policy Act but it took time to implement. Mr. [William] Ruckelshaus was the first administrator of EPA. I went to Kansas City to a meeting that he had called of all of his people. They invited affiliated groups to witness a video setting out EPA's goals, et cetera. I was impressed with how well the video and meeting were put together. That was the real beginning of EPA, to my knowledge.

Now, the man placed in charge of EPA's Kansas City region was a fellow named Jerry Svore. Jerry was a public health officer from Texas, and he and I had worked together quite a bit when I was in Tulsa and also on a few problems in the Missouri Basin.

Nationwide, a coolness existed from the start between the Corps and EPA. I think it was more EPA than the Corps, although I don't want to get into that issue too much. The Corps offered its help, yet there was some hesitancy on both sides early on. As you know, this conversion of the Corps to support EPA's environmental program didn't happen overnight. It wasn't like turning on a light switch or anything. So there were tensions.

Svore and I prepared and followed a memorandum of agreement on how we would operate. It worked out fine in the Missouri River area. There were no problems between the Corps and EPA in our area. We sent our plan back to Washington thinking it was good enough to become sort of a national guide. I think it got through the Corps okay, but it never saw the light of day elsewhere. It's been so long I don't recall the details, but basically it listed the areas where each of us had our own responsibilities with no overlap, and then it listed the areas where we would probably run up against each other and how we were going to go about handling them. It worked out very well because of the plan and the personalities of the individuals in the MRD area.

Q: Were there any problems with recreation while you were there?

A: Yes. We were building parks along the Missouri River for recreation. Also, all our lakes provided recreation facilities. People in the area were great outdoors people. We weren't really building many new dams. Much of the additional recreation related to new items at old projects or improving facilities at existing items. I don't recall it being nearly as big an issue as it had been in Tulsa. Of course, whenever we fluctuated reservoir levels, we heard about it from recreationists.

Land use was getting to be a greater problem than recreation. The shoreline at those big reservoirs up in the Dakotas were difficult to police. Besides, Indian land borders the shore for many miles. We didn't have a tight control over it, and we were having trouble with people infringing on the public part of the project—fencing off segments, building, et cetera.

Q: Did you continue to push value engineering?

A: Yes. Value engineering was a Corps policy by 1970, so it was not a priority leadership challenge in the Missouri River Division during 1970 to 1972 in view of the environmental issues and all that was going on. In many ways, you know, the value engineering concept applies to the environmental analysis. The value you're evaluating is the environment, not necessarily costs.

Q: You mentioned project operations. Is this an area where mitigation became a factor?

A: Mitigation initially became an operating procedure. To explain, as a result of the environmental program, we re-evaluated every project to see if we should operate it differently. For example, we were concerned about drawdown and also releasing water downstream during certain spawning seasons. After we had re-evaluated operations on all projects in the Missouri River Division, surprisingly little change had to be made. We did make whatever changes were necessary to mitigate adverse operational impacts.

Q: Just a couple of quick questions. The housing construction you were talking about, this is military construction public housing?

A: Military housing. In the civil areas, I wanted to provide in the remote sites a house for the resident engineer and one other operations person, i.e., two houses. That program fell on bad times. We were successful on a couple of the projects, but basically I think the program went the other direction. We had to get rid of them and let the people live in communities and commute. To answer your question, all the housing that I was speaking of before was military family housing.

Q: Military. Mostly Air Force?

A: No. Not mostly, but a lot. During that period the Army adopted a standard design for barracks. We built new barracks on both Army and Air Force facilities.

Q: That's in anticipation of the all-volunteer Army or is it—

A: Well, let's see, could that be true or not? I don't think so. I think it was too early. Instead of just a bare-bones barracks we gave the soldiers two or three to a room, in little clusters with reception or lounge areas. The barracks were much different and we had problems at first, unique things such as locks. Every soldier had to have a key. Of course they took the keys with them when they moved. I remember General Rogers saying some people did nothing but make keys all the time. I think that's almost true.

Q: It sounds like quite a bit of the work was for the Air Force.

- A: I'd say 60 percent of all types of construction was Air Force. Leonard Wood was a big program, but most of the Army posts were fairly mature—Leavenworth and Riley. There were projects at each of those but nothing significant. Mostly housing.

The Army ammunition plant program was big. Also, we were building the only Sentinel site at Langdon, North Dakota. That complex project was being managed out of Huntsville. General Rip Young was in charge and George Rebh was his deputy. They had the responsibility for the technical requirements and MRD had to do some of the contract management. It was a little bit awkward but we worked it out okay. Similarly with the ammunition plants, rehabilitation.

- Q: Just one follow-up. This may have happened more at the district level, but in response to NEPA, did the internal organization of Corps offices change? Did it bring in more specialists from different areas?

- A: Yes, we salted them with geologists and environmental people. We changed or supplemented the disciplines. That's how it was done. That's the point I was trying to make before.

The Missouri River Division job turned out to be a very exciting assignment. A turning point in many Corps activities might have evolved from the way the Missouri River adjusted its staff and applied its capabilities to new environmental requirements. I don't want to overstate it. I guess any division engineer would have felt the same way, but that's the way I feel about it. The assignment proved invaluable in dealing with what lay ahead.

- Q: What impact did the MRD assignment have on your career?

- A: It served as an excellent method of reshaping my thinking from the combat situation in Vietnam and all that entailed, into the reality of the environmental program in the United States, which was an infant when I arrived in Omaha. Much of the entire tour there was consumed, more or less, by trying to get up to speed on what the National Environmental Policy Act really meant—not only in the civil works program but also in the military program, which included cleaning up ammunition plants, converting heating systems at major installations, and the normal construction.

To digress a moment, Mr. Wendell Johnson had been the chief engineer in the Omaha District and later the Missouri River Division. Wendell Johnson ultimately came to Washington. He was a truly outstanding engineer, not only for the Corps but for the country.

As I was heading to Omaha, Wendell said, "Here are a couple of people that you might want to meet." One was Chuck Durham of HDR [Henderson, Durham and Richardson]. That was a very good association. Another was Leo Daly, Sr. Both fit into some later events. For example, a few years later Durham wanted someone to help with their big project at Jidda Air Base over in Saudi Arabia, so he wanted to know about Pendergast. I told him if he wanted somebody to put out on the end of the line that would do what he was told to do but didn't need a lot of supervision, it'd be Pendergast. If he wanted to bring him into the office, that'd be another matter. So he hired Pendergast.

Back to Daly. Later on, Leo Daly had the big job in Saudi Arabia to design the National Guard headquarters. Mr. Daly nominated me as an honorary member of the American Institute of Architects. Then there was Peter Kewitt, founder of Kewitt Construction and just an outstanding person. As in Tulsa, I met a lot of people who were very nice to me and our family and have remained associates over the years.

I loved the country, the area. There aren't many things in the Corps any more impressive than the six dams on the Missouri River. I remember telling Pat Pendergast about Clark Hill Dam in

Savannah District until he said, "You haven't seen any dams yet. Wait'll you see these." He was right. Fort Peck is special. You know, it was a make-work job by President Roosevelt—30,000 people worked out there. A theater ran night and day for like five years. Today, billboards of early movie actors—Clark Gable and Myrna Loy—remain on display. The small lodge is very interesting also.



General and Mrs. Morris at a banquet in Omaha in March 1972.

Gerry was able to travel with me quite a bit, and she worked at helping me with the job. She deserves a lot of credit. She was heavily involved with the engineer wives activities and we became very close to the civilian staff.

Soon after arriving I needed a chief of engineering, so I searched the Corps and discovered Lloyd Duscha. A graduate of the University of Minnesota, he had worked on Garrison Dam earlier. At that time, he was in Philadelphia District working for Colonel Jimmy Johnson, who later became Deputy Chief of Engineers. I called Duscha and he wasn't all that thrilled about moving. Lloyd never did like to move, I guess, but he came, and that was good for me.

I had an excellent deputy, Jim Fuller. He retired from that job later and went to work for Chuck Durham at HDR. He and his wife Norma have become an active part of Omaha and are still there. He was from Wyoming.

I had to buy the division a new airplane. We ran a contest to name it. Everybody was involved and selected the name "EMARDEE."

When I went to the Missouri River Division I did not realize that my next assignment would be director of Civil Works, of course. I think General Clarke may have had that in mind because he told me early in my tour in MRD that he was thinking that I might fill that job when General Koisch left it. That's the way it turned out and may have been the biggest impact of MRD on my career. While at MRD, I started testifying before the committees of Congress and became familiar with the members of the committees and the staff people that I'd be dealing with later.

My promotion to major general occurred while I was in the Missouri River Division—a very simple ceremony in my office attended by Gerry and our son John plus Jim Fuller and a few others.

So in hindsight, the environmental program, "The Corps Cares" endeavor, urban studies program, staff changes and training in MRD, hearings, promotion to the proper grade, made moving to Civil Works a reasonable next step, let's say.



Christmas card designed by the Missouri River Division staff about the new division airplane, 1971.

Director of Civil Works

Q: So in the spring of 1972 you became director of Civil Works in the Corps headquarters. How did you feel about getting that assignment?

A: There were other well qualified generals, of course, who might have gotten the job, but I was pleased it was me. I had expected that assignment would be the culmination of my career. I had a deep interest in the military program and regretted leaving it. Even so, my background suited me also for the civil public works activities, and we were very happy to get the assignment. Gerry and I still had the home in Arlington which we'd acquired when we came from the Military Academy some years earlier, so there was no problem with a place to live. We arrived in the Washington area in late May 1972. Our arrival was recognized by Speaker Carl Albert, whom I had known when district engineer in Tulsa. He hosted a small reception for Gerry and me in the speaker's office. The entire Oklahoma delegation attended. A real honor and a very nice affair.

I'm not sure of the exact date we reported to OCE, but I am sure I'd only been director of Civil Works a couple of days when Agnes tore up the Susquehanna Valley and made my introduction to the civil works program rather quick, abrupt, and impressive. My recollection is that on Friday, 23 June 1972, a very severe storm passed through Washington with forecasts of damage and flooding farther north. It was raining cats and dogs in D.C. My basement was flooding, and I received a call from General Clarke saying he wanted me to be at the Andrews Air Base to take a flight up to the Susquehanna River early Saturday morning. I remember wondering why his

plane wasn't at National Airport, where it belonged, and soon realized that it had been moved because of the weather conditions.

So we arrived at the plane early, about 7:30, and immediately took off. The storm had passed. General Clarke, Major [Walter] Smith, his military assistant, several civilian personnel from OCE, and I flew to the Chesapeake Bay and up the Susquehanna River till we got to Conawingo Dam in Maryland, north of Havre de Grace near the headwaters of the Chesapeake. When we arrived, there were barrels floating down the river. The water was pouring over the spillway, and obviously upstream flooding was going to be rather serious. I remember General Clarke saying, "This is pretty bad. We'd better start doing something about it." So he had Major Smith contact Colonel Lee Little, who was handling military personnel in OCE, and had him arrange for 150 officers to be prepared to move up to the flood area Monday morning. This was Saturday A.M.

We flew farther and came to Harrisburg, and the impact of this flooding was even more severe than expected. We saw the governor's house in Harrisburg standing in water up to the second floor. General Clarke then turned to Smith and said, "Besides those hundred or so officers, I'd like 500 civilians ready to come up here first thing next week." I was impressed by his perception and decisiveness as he went about the business at hand.

Remembering my experience with "Operation Snowbound" back in the late 1940s, when neither my wife nor I knew where I was going or what I was expected to do, I asked General Ploger, the commanding general at Fort Belvoir, to assemble the selected officers and their wives in the theater on Sunday so I could explain the mission.

General Clarke's decision-making process was so crisp and effective that you have to wonder why we have had so many major problems with storms like Hugo and Andrew. In the early 1970s we didn't have FEMA, the Federal Emergency Management Agency. The Office of Emergency Preparedness headed by General George Lincoln was the responsible federal agency. Lincoln, a retired Corps of Engineers officer and outstanding political scientist, was appointed to this position by President Nixon.

General Lincoln and General Clarke had known each other quite well, and Lincoln authorized General Clarke to do whatever was necessary. General Lincoln asked to be kept apprised and also, if there were any major decisions, that he be briefed on them in advance. Well, with that kind of authority, the Chief was able to move briskly to handle the Agnes event.

I do recall that before landing in Wilkes-Barre, we knew we would find trouble. When we entered the terminal, Congressman Daniel Flood had already set up a field office for his congressional district, and he was getting people's names and giving them encouragement. As soon as he saw General Clarke walk in, he called for a large number of typhoid fever shots. Of course, we weren't prepared to get the serum or really what to do with the problem. My recollection is we said, "Yes, Sir," and proceeded with trying to get the overall situation organized. The serum did arrive promptly.

Now, Agnes turned out to be quite a management effort. Baltimore District normally would be responsible for this, but Colonel Lou Prentiss, district engineer, had so much to do that we couldn't ask him to take on this problem as well. It required a lot of attention and a field office. General [Richard] Groves, the division engineer of North Atlantic Division, suggested that we set up a provisional district. General Clarke agreed and the Susquehanna District soon became operative. Colonel John McElhenny became district engineer.

As I recall, officers and civilians arrived as requested. Local retired personnel who were aware of the problem volunteered to help, and they were used. Contracting arrangements were

set up immediately in public buildings around Wilkes-Barre. The district engineer was announced and became the center for activities, relieving Prentiss. The activation order indicated that the district would be deactivated when the problem had subsided.

There's no need to go into all the ramifications of what we did in conjunction with Agnes except to highlight some lessons learned that are still proving to be quite valuable.

First off, we needed to understand that the flooding problem in Harrisburg, Wilkes-Barre, and in that stretch of the Susquehanna River was aggravated because of subsidence of levees which had been built over coal mines; therefore, the levees were not as high as when built. That was point one.

Point two was that the levees were built before the dams that stored the excess water were in place, therefore the levees, even had they been at the proper design height, would have been overtopped. So it was pretty clear that the levees gave the people a false sense of security.

A policy review reaffirmed that if you're going to put in a levee system, you better put the upstream control structures in at the same time or first. Of course, those dams were built immediately after Agnes.

We acquired trailers and built trailer communities for the people who'd been displaced. That was a big project and a lot of money went into it. This priority work began at once while we were starting to do the clean-up work for which contracts were issued promptly and expeditiously.

We built several large trailer communities, and they were fine except the residents did not know each other. Also, the post office didn't know how to find them. Further, there were no stores around, so we generated a community with no support structure. The American people proved rather versatile and were able to cope with these disadvantages.

In time we proposed, as an alternate, to give the people a limited amount of money to fix their own houses. The Office of Emergency Preparedness had to approve this plan.

A related idea was to erect trailers in people's back yards when possible so they could live in these trailers while their homes were repaired, et cetera. Those were relatively important changes. In some cases we probably couldn't have put the trailers in the back yard because the yards were full of mud, trees, junk, and everything, and some of the houses were just terrible inside.

Another invaluable action was the frequent visits by key personnel to families and to see what was happening. General Clarke was there several times. I was there even more often, and General Groves more than me.

I'll never forget, we went into one house where the first floor was covered with mud, and the lady came out and threw her arms around General Clarke and said, "I'm so glad to meet you, we were in such terrible shape, but your people came and moved us upstairs. My husband had had a heart attack, and he's now in bed." It was really a sad story. So nothing would do but she wanted General Clarke to go up and see her husband so he could thank us for what had been done.

So Agnes was an abrupt indoctrination into the hazards of the Civil Works Directorate. I know the Corps received some criticism, but when you think back through the reaction and the Corps' response to human problems, you have to be proud. You wonder if the new system is any better.

I think FEMA had to happen, simply because there were so many things that needed to be done that were beyond the authority of the Chief of Engineers. It was a stretch, to take public works money and use it, even though the law said you could use public funds which had been appropriated for other purposes to reduce loss of life and hazards—I don't recall the exact wording. That was the intent of it, but it's quite a stretch to get from there to supplying homes and that sort of thing and the cleanup.

Agnes was a major event. In the years that followed we had several more major disasters. Our experience with Agnes provided the needed confidence to make decisions later.

Q: Let me ask a couple of follow-on Agnes questions. Several of the things that you mentioned—trailers and things like that—have become sort of standard procedures for FEMA now.

A: Yes.

Q: I guess the Office of Emergency Preparedness was small enough of an agency without a large budget so that it really couldn't do that sort of thing.

A: The Corps did it. We built these trailer parks. When Agnes was over, the trailers were stored for future use. The experiences in Agnes laid the groundwork for much of the present response to hurricanes. Tornadoes, earthquakes generate different circumstances. Where you have a lot of water, Agnes was a proving ground for much of the current activities, just like you said.

Q: Were there any other federal agencies that played nearly as large a role as the Corps did, or was the Corps sort of the lead of the agencies?

A: No, not federal. At the same time, state agencies, the utility companies, the highway people, and the state health department were involved. The response and the cleanup, the re-establishment of normal life among the individuals was basically a Corps activity.

Q: Just one quick follow-up while we're on this. Were there any problems in closing the Susquehanna District?

A: No. We closed it as planned. There was some pressure to keep it, but there was no reason to keep it. There was nothing for it to do. We didn't give it any mission other than the emergency work.

Q: That's sometimes cited as the last Corps district to be closed. That's a little bit of an anomaly.

A: Well, it is the last one to be closed, but it was also the last to be opened, and it was always intended to be closed.

Q: I did wonder if there was some pressure to keep it open.

A: Some people wanted to keep it open. Closing it down got to be a little tedious because of the mechanics of closing it. General Groves didn't want to close it until he got all of the bills paid and all that cleaned up. At OCE we selected a certain day. I don't remember what the date was, but once all the players accepted the date to fold flag, that was the end of it.

Q: Agnes was an unusual event. What about the more routine business of civil works?

A: Now to the more day-to-day type business of the director of Civil Works. Agnes was a fast start for a new three-year tour and proved to be good conditioning for the rest of my assignment because things never seemed to slow down after that.

I hadn't been in Civil Works very long before I realized that my style of operating would be somewhat different from my predecessor's. I prepared a memorandum in some detail outlining how I thought we should operate. Basically, I sought a team spirit where everybody worked together to resolve problems quickly and with good judgment. That document was satisfactory to the need and did serve as a touchstone for the rest of my tour in Civil Works and later.

I came from Omaha with a belief that the people who knew the Corps liked the Corps. I think we had pretty well proven that if we could just get the word out and say the right things, the public understanding and acceptance of the Corps could be vastly improved. Well, that was a belief which I tried to instill during my term as director of Civil Works. We worked hard getting the word to the public by communicating in various ways and putting a good, solid, professional face on our work in the public arena. The same requirements had to apply in dealing with the powers that be in Washington outside the Corps of Engineers where our problems were as severe as with the public.

Q: Who was on your staff in Civil Works?

A: The deputy director of Civil Works initially was General Ken Cooper, but he left soon after my arrival. He was replaced by General James Kelly, a brand new brigadier. Kelly was very smart, made a wonderful impression, and was very decisive and courageous. He was an excellent deputy for me. He saw to the implementation of programs already in place and also new programs as they came along. I took responsibility for dealing with the Congress and the Executive Branch of the government, and particularly the new Secretary of the Army for Civil Works.

We had a third person in the office, Colonel Howard Sergeant, the executive. He was responsible for the day-to-day operation of the office and was assisted by Lieutenant Colonel Ernie Edgar and also Tom Hicklin. Jeanine Huffman, who later became the Chief of Engineers' secretary, was the director's secretary. The civilian staff was outstanding.

I soon learned that the best head in the place for dealing with new problems, and particularly with the legislative problems, was Joe Tofani, whom I had known since Tulsa days. He's very strong minded, of good character, and quick to arrive at a good answer to tough problems. He loved the Corps, he understood the Corps, and I soon learned to talk to Joe on any problem of a policy nature. That relationship continued for the remainder of his assignment with the Corps. Few people were as highly respected among their peers and their associates as Joe Tofani. He was a tremendous asset as an adviser to the director of Civil Works. I'm sure he was to all directors. He certainly was to me.

I don't mean to pass by the other excellent people we had. [Irv] Reisler, [Alex] Swaiko, [Homer] Willis, [Mark] Gurney, [Bory] Steinberg and many, many others were key members of the Civil Works team. We had some folks from the Secretary of the Army's office working with us at the time. Steve Dola still is in the office of the Chief of Engineers as a representative of the Assistant Secretary of the Army for Civil Works. Dr. [Ed] Dickey came while I was there.

I should mention the training program of young officers. Again, Tofani was the key in developing them into outstanding public servants, either in the Army or outside. I can think of several that he trained that went on to be important players elsewhere in the government. Mike Toohey, Tom Donnelly, and Jim Smith all left the Army for civilian careers and served the country well as congressional committee staff persons. There are others.

I could never have been effective as the director of Civil Works without such outstanding help.

One of the first challenges after Agnes was to replace the chief of engineering. Joe Caldwell, who had been the head of engineering in the Mississippi River Commission, retired about the time I arrived in Civil Works. It turned out I had to fill this position twice while I was director of Civil Works. The first selection was Homer Willis. Homer came also from the Lower Mississippi Valley Division, LMVD. We were always very pleased, very happy with his work.

After Homer retired, I was successful in getting Lloyd Duscha, whom you may recall I had brought to Omaha. I'd been working on Lloyd before, and he said he didn't want to leave Omaha. When the job came open again, I went back to him, and he finally took it. I asked why he didn't take it the first time. He said, "You didn't try hard enough," which I thought was humorous. I had finally tried enough. I think history will prove that was a good choice.

We always had excellent people in Civil Works. Besides those mentioned already, Ken Murdock, Gene Lawhun, and Lew Blakey left the Chief's office to take senior jobs in the field so that they could return to the top responsible spots in Civil Works. The challenges that the directorate as a whole faced from 1972 to 1975 probably were as intense as any period. I should point out that the senior civilian in the Public Affairs Office by this time was Locklin Mouton, who had been with me in Tulsa. That was fortunate because we understood each other.

Q: What major problem areas did you encounter as director of Civil Works?

A: The whole period was laced with the environmental matters. The public perceived a lack of clear policy in the Corps on where to go or how to get there. We were challenged on a lot of legislation that we'd been using for years, like the modernization of the facilities on the Ohio River. Out of that came the Lock and Dam 26 issue. Some public works projects were being stopped, such as the Cross-Florida Barge Canal, as we were trying very hard to understand and survive the legal implications of the National Environmental Policy Act.

At the same time, the Office of Management and Budget [OMB] and others were proposing to the president of the United States that the function of the Chief of Engineers in the civil works arena be placed under the Department of the Interior, the Bureau of Reclamation, or be combined along with the Department of Agriculture, the Bureau of Reclamation, et cetera into a super cabinet under Secretary Earl Butz. Normally, the director of Civil Works, rather than the Chief of Engineers, was the spokesperson in dealing with and if necessary, speaking out against such changes. Of course, the risk there is that somebody might get fired. In that case it'd be the director of Civil Works.

Another underlying problem was there had been no public works authorization bill, or omnibus bill, for some years, and many projects which were waiting their turn were standing in the wings, and probably would not be put into an authorization bill until the National Environmental Policy Act constraints had been satisfied. Besides, there was not a great deal of enthusiasm to spend because the country was preoccupied with the oil shortage problem.

We had the Bicentennial, which was kind of fun and we'll come to that later, but it was another significant event with which we had to deal. The most significant legislative event besides NEPA was the Federal Water Pollution Control Acts amendments in 1972, called the Muskie bill. It was passed in the Senate without a declining vote, 93-0. Included were a couple of provisions which later became very important—Section 202 and Section 404, et

cetera. All of these attempted to delineate the authorities of the EPA and the Corps. The Corps was given responsibility for managing the permit program.

Q: The first Assistant Secretary of the Army for Civil Works was appointed while you were director of Civil Works, wasn't he?

A: Yes, a factor which would impact all civil and indirectly military activities was the announcement of the first Assistant Secretary of Civil Works, former congressman of California Victor Veysey. He was an engineer and as the first Assistant Secretary of Civil Works laid the groundwork for future assistant secretaries.

The Corps knew how to execute its mission. What we really needed and anticipated from the assistant secretary's office was political help and advice in the legislative process and support in senior levels of the Executive Branch. Secretary Veysey was valuable in those areas, however, he did establish certain operational micro-management procedures which subsequent assistant secretaries expanded upon and I contend became more counterproductive than helpful.

General Clarke asked me, before Mr. Veysey was appointed, what I thought of the idea of an Assistant Secretary of the Army for Civil Works (ASA/CW). I told him that I thought it would be helpful if the assistant secretary dealt with those elements of the government outside of the Corps, particularly legislative. General Clarke was not very enthusiastic, and I surmise that he did not believe that the ASA/CW role as I had enunciated would happen, and further that the assistant secretary would get into the operation of the Corps. Clarke was right. That, to me, is the most serious problem that the Assistant Secretary of the Army for Civil Works presents to the Corps of Engineers.

I don't know today, some 20 years later, how realistic my fear is concerning unnecessary limits on the Chief of Engineers, but my guess also is that the decision-making process in the civil works arena is less flexible than it used to be.

Q: How did OCE and the new ASA/CW work together?

A: As an officer, I had direct association with two ASA/CWs, Victor Veysey and Mike Blumenfeld. Communications with the ASA/CW were my responsibility as the director of Civil Works. As Chief, General Clarke dealt with the Secretary of the Army. General [William] Gribble was emphatically clear that he wanted to continue that arrangement. After all, the Chief's first responsibility is to the Army; and civil works activities, while of great importance, are only one facet of these duties.

Mr. Veysey's principal assistant was Jack Ford, who had been with the Corps for years. He came up through the Corps—very understanding and helpful in establishing the start-up information systems necessary for the Assistant Secretary of the Army for Civil Works to do his job. He wrote me, as director of Civil Works, his ideas on how the directorate could become organizationally and operationally effective in areas of interest to the assistant secretary. I appreciated his instructions but was well aware that a new voice was beginning to call shots in the public works arena.

I developed high regard for Mr. Veysey, and he and I worked well together from my perspective. One of his concerns was that members of the Corps of Engineers were bypassing him in dealing with the Legislative Branch and perhaps with higher elements of the Executive Branch.

On one occasion, Mr. Veysey accused me of influencing the Congress on a specific item of legislation. In that particular case we were innocent, but when I told him so, his reaction was clearly one of disbelief. Well, to me, that was a serious charge because I didn't say one thing when I had done another. I offered to quit.

Mike Blumenfeld replaced Veysey. Mike understood the requirements for the Corps to be a good public service organization. He was not attracted to operations. He was attracted to public understanding. He was a good writer and I think a fine secretary. He retained Jack Ford and the two made a good team.

Blumenfeld handled himself the way we thought his job should be handled, so much so that successor directors of Civil Works found him to be a good sounding board. Then in-house business which ordinarily we would not have shared was discussed openly in the assistant secretary's office.

That was fine, as long as Mike was there. He was replaced by Mr. William Gianelli, another engineer from California. He trumped everything Veysey did and, as I learned, really got into the inner workings of the Corps and slowed down the decision-making process. Mr. Gianelli was a strong secretary and achieved much. He would often bypass the Chief and the division engineers and go directly to a district. This brought the Chief more and more into the picture. As time went on, the Assistant Secretaries of the Army for Civil Works dealt more and more with the Chief of Engineers—a regrettable extension of lines of communication because of the subtle yet adverse impact on the Chief's attention to his other responsibilities.

I followed General Gribble's procedure. Unless major policy implications were involved, I just didn't think I should interfere with the director of Civil Works' business. We worked pretty hard at keeping things in perspective. If all the Assistant Secretaries of the Army for Civil Works had followed the Veysey and Blumenfeld leads, the situation today would have been different, and better.

I don't know what else to say about that. Veysey was helpful to the Corps for many major problems under Lock and Dam 26. He required us to do certain things which, from a political standpoint, were right because they gave him the knowledge and leverage.

I have spent a lot of your time on that subject, probably more than we should have, but as the first director to have the Assistant Secretary of the Army for Civil Works, it's probably important to set the groundwork.

If General Clarke asked me today whether I'd like to have one or not, I'm not sure what I'd tell him. I'd like to be able to say, "The intended purpose of the Assistant Secretary of the Army for Civil Works has been fulfilled perfectly." Then we'd all be happy. The nature of the beast is such that if you put an engineer in there, it's not going to happen. Seems to me they can't resist telling the *Chief* how to do his job, and most unfortunately, each new ASA/CW seems only to add to his predecessor's domain over the civil works program and weaken the Chief of Engineers' ability to attend to his primary role of supporting the Army's engineering needs.

Q: The Section 404 program was another new problem confronting the director of Civil Works, wasn't it?

A: I mentioned the Federal Water Pollution Control Act amendments. That, plus NEPA, put us face-to-face with EPA. Ruckelshaus had been followed by Judge Russell Train, who became the administrator. He was later followed by Doug Costle, with whom I had considerable dealings in the late 1970s. The area where we had the most direct interest was implementing the dredge and fill and the regulatory program for permits. This was truly plowing new

ground. As you may recall, I mentioned when I was in Savannah District as deputy district engineer, a couple of hours would take care of the permit applications for the month. Well, we went from a handful of permits to tens of thousands almost instantaneously.

Section 404 referred to "waters of the United States." It didn't say, "dredge *and* fill," it said, "dredge *or* fill." So the effect of that was to extend in Nebraska alone the miles of streams requiring permits tenfold. How to manage that program was a real challenge. How to tell the public what it meant was a problem. Brigadier General Ken McIntyre became the deputy director of Civil Works and managed these tasks.

He dealt in EPA with Chris Beck and Becky Hamner. Beck until recently was the chairman of one of the largest environmental companies in the United States. Hamner left EPA in 1992 as administrator of water and went to France with an international group. We worked days to draft a plan to implement the law. New regulations were published in the *Federal Register* and public hearings were conducted throughout the country. Ken McIntyre did a tremendous job in a series of public meetings by explaining what this was all about to the people.

Later, while the Corps' leadership was having a meeting out at the Kingman Building, Locke Mouton put out a notice saying every farmer would have to get a permit to plow ground. Lester Edelman, the chief counsel for the House Public Works, called me up and asked, "Jack, have you got a death wish over there?" He considered that was such a startling press release. It may have been startling, but it was sure effective, because soon thereafter the law was amended to exclude certain woodlands and farms.

This mission was such an expansive addition to the Corps' effort that we had difficulty coping. One day—must have been 1974—General Gribble called me and said he just wasn't happy with the 404 program, too many problems. He said it was my responsibility to do something about it. I agreed.

I called Manning Seltzer, the general counsel, and explained that the problem "is not our lack of ability to do things, it's our inability to understand better what we're supposed to do, so you and I need to address this." Manning came up with the brilliant idea of having a national meeting of all the district engineers and to review a series of preplanned case studies over a three-day conference. We did it in New Orleans, Louisiana.

General Heiberg, then Colonel Heiberg, district engineer, arranged for us to use the new Marriott Hotel on Canal Street. The meeting basically turned the Corps around. I say "turned the Corps around." That's a bad way to put it. It educated the Corps. I remember the case studies that came up. We don't need to take time with all of them here, but each was a landmark event.

Al Costanza, district engineer, Wilmington, North Carolina, presented the Bald Head Island issue. An applicant wanted a permit to build a dock to offload some equipment. Costanza concluded he was not going to issue a permit until he learned the use of the equipment. The applicant objected on the belief that all Al was required to do was to permit him to build a dock. Well, this became the "nose of the camel decision" because it turned out that the district did have a right to determine if the use of that dock was going to lead to environmental destruction.

There was the Block M case down in Miami. Years earlier somebody had started a fill on which to put a high-rise condominium as a retirement home. He'd stopped for some reason when the top of the land was just below the water. Later, after NEPA, he applied for a permit to continue the fill so he could erect the retirement home. The permit was denied because a

retirement home didn't have to be on the water. That decision held also and established the principle that a nonwater-essential building should be built someplace else.

After that meeting, the Corps did a much better job. I have to give General Gribble credit for putting on the heat, and I give Manning Seltzer credit for figuring out what to do. Mother Nature didn't seem too pleased, for as we finished our conference, a hurricane came in from off the Gulf and we had to leave quickly.

Q: So this was in 1975?

A: That was—no, I was still director. I'd say 1974, Gribble was the Chief. We should not overlook the fact that General Clarke had initiated the Environment Advisory Board years before, after NEPA was passed. The Environment Advisory Board idea showed superior foresight. The members were strong advocates of environmental management and were not necessarily friends of the Corps. The advisory board met with the Chief and the OCE staff. The director of Civil Works managed this group. Many new and constructive ideas flowed from these gatherings which worked well.

At the same time the members learned what the Corps was about. Some of the strongest supporters of the Corps came from members of that Environmental Advisory Board who began as untrusting, or at least skeptical, people.

The 404 program challenged everybody. The staff requirements were tremendous, as regulatory sections appeared in every district. We got no additional people although we complained to OMB.

Not only did the Corps and EPA have to prosecute the regulations, but we began to define the Corps' and EPA's responsibilities. That's still going on, but in the earlier days, EPA and the Corps people took the broad position that EPA would establish the policy while the Corps would execute it.

Another aspect of this program which I doubt is well understood today was the effect of this law on dredging. Dredging was a dirty word, a four-letter word. Dredging material was always "spoil," it wasn't "material." It was assumed to be polluted before anybody could prove it was or wasn't. General Frank Koisch, more than anyone else, perceived the complexity of this problem and obtained congressional authorization and directed the Dredge Material Study by the Waterways Experimental Station. It started about the time I arrived. Dredge disposal was not just a United States problem. It became an international issue. The studies were able to demonstrate that most dredged material was not polluted, and that which was polluted could be managed.

In the meantime, we went into this tremendously expensive and somewhat unnecessary program of diking off areas into which all the dredged material was placed and not allowed to escape. It was either that or put it upland where it couldn't get back into the water. We even considered such things as filling the strip mines out in Pennsylvania.

We published a little book called *Dredging Is for the Birds*. I think we did it in about a week. We selected pictures of birds having a great time on property that was built out of dredge material. Hart Mueller Island, a disposal site in the Chesapeake Bay, had been idled a few years earlier while waiting for the next dredge operation. During that delay this island had become a beautiful marshland full of birds. Then, when we wanted to go back and use it, we were not allowed to do so because now, all of a sudden, it was a wildlife and bird sanctuary.

That caused us to put out this book, *Dredging Is for the Birds*. Later, years later, I wrote a letter and advised the head of the Audubon Society that if he would describe the habitat needed for certain endangered species, the Corps could build them.

As mentioned, NEPA contained no grandfather clause, and we were in violation of the law as soon as it was passed. I ultimately set up a group of congressional briefings. Lieutenant Colonel John Wall, who had been with me in Vietnam, prepared the briefings on where we stood in implementing NEPA and spoke to various sections of the Congress.

We especially needed to explain why we had not implemented NEPA in the operational field, particularly in the dredging field. We were getting to it, but the priorities addressed new work first, then ongoing construction, et cetera, and O&M [operation and maintenance] last. I also explained to the EPA that they could stop dredging, but our plan was to have all in order in a couple of years, and showed them our time schedule. As a consequence of these efforts, we didn't have to stop anything in the operational field.

That was, I think, an initiative which saved the taxpayer and us a lot of money. Because of this dredging issue, Bill Murden and I spent a couple of days on a Corps hopper dredge in Portland so I could better understand the business. I began to realize that dredging was an expensive operation and that probably the Corps should turn over to private industry the hopper dredge business. It took a little while to ferment this idea, but privatization was finalized during my term as Chief.

Q: Lock and Dam 26 was another important issue with environmental implications.

A: We had been repairing and upgrading the locks and dams on the Ohio River under Section 109 of the Water Resource Act of 1919, which gave the Chief of Engineers *authority* [not financing] to maintain, repair, and rehabilitate existing locks and dams up to current traffic without further congressional approval. The word "current" may not be the precise word in the legislation. The interpretation in the Chief's office for years had been that "current" meant today's traffic, not the traffic when originally authorized. As a consequence of that, we'd upgraded practically all of the Ohio River locks to actual 1970 traffic levels.

Lock and Dam 26 came along. General Charles "Chuck" Noble was the division engineer in the Lower Mississippi Valley Division. This was early in the process. He called me up one day in early 1973 and said that he was going to issue a request for proposals on a new Lock and Dam 26. I remember distinctly asking him if he had an environmental impact statement. He said, "Well, we don't need one. There's no opposition, there's no environmental problem here."

I don't remember the dates exactly, but before he ever got around to a contract, we were challenged. The challenge was that we were going to build a lock and dam to increase the traffic from the original design to meet 1972 traffic requirements.

Well, when we looked at this law and really got into it, Joe Tofani said, "I've known for a long time that we were on shaky ground with that law, but now that they've called our hand, we might as well accept the fact that we're not doing this right and back up and regroup."

The Water Resources Congress, a rather powerful organization, called a meeting at the Coal Building in D.C. to discuss Lock and Dam 26. Their thrust was to harness their political power to either redefine the original language or to pass an amendment to relieve Lock and Dam 26. Of course, the fact of life is there was no point in spending millions of dollars to meet original traffic by rebuilding a 100-by-600-foot lock. So the objective never changed, but how to reach it became the issue.

When asked what I expected the Corps to do, I advised them that the Corps' position was to go the whole ten yards including authorization, which meant a complete evaluation of the impact of this increased traffic on the environment of the upper Mississippi, et cetera. Reauthorization would take four or five years. That didn't seem to be a very attractive idea, but on the other hand, I felt that was the only course open to the government. I went to the groundbreaking as Chief of Engineers five years later.

Interestingly enough, preparing the Lock and Dam 26 authorization language presented a couple of wrinkles worth mentioning. The first lock [110 by 1,200 feet] was adequate for 1976 traffic. The second lock was not needed for the current [1976] traffic but would be needed to meet projected growth. It was impossible to authorize the second lock until the full analysis had been made of the effect of added barge traffic on the upper Mississippi environment.

The environmental impact on the upper Mississippi of the increased traffic which would result from the second lock presented a difficult problem. The upper Mississippi is changing naturally all the time and will continue to do so for many years. The basic problem was to measure the impact of added traffic when there was no clear, stable baseline.

The study of this was put under the umbrella of the Upper Mississippi River Commission. Ultimately the effect of increased traffic which a second lock would allow on the upper Mississippi was reasonably well defined and found insignificant, and the project went ahead.

That was a landmark case because from then on all the other locks and dams that we've modernized were done differently.

Lock and Dam 26 and also Tennessee-Tombigbee were two jobs that followed me through my moves in OCE.

Another issue related to Lock and Dam 26 is still out there, and that is how to handle recreational vessels. The impact of the recreational vessels on commercial traffic has become significant since we originally opened these waterways. We should build separate locks for recreational vessels. The standard commercial lock is not designed to handle smaller boats, and while it would have been expensive, we had a chance to build small-boat locks as part of the Lock and Dam 26 structure. In fact, an early plan provided a passage for recreational boats that would not interfere with the commercial traffic.

I got on to this idea as a member of PIANC, which is the Permanent International Association of Navigation Congresses. On the Rhine-Main-Danube Canal a lot of study went into the use of separate locks for recreational vessels.

Q: How did you get involved with PIANC and other international activities?

A: Navigation basically was a first love of mine in the civil works arena, and because of that, I became involved with PIANC in 1959, with the National Waterways Foundation later in life, with Harry Cook's waterway conference, and actually was called upon by the government of the United States to get involved in two international navigation projects. After the 1973 war, the Corps was asked to advise the chairman of the Suez Canal Authority, Mr. Mashour Ahmed Mashour. Bill Murden, Colonel Vincent Rathburn, Homer Willis, and I made up our four-man team. Our job was to advise on how to put it back in operation and to improve its efficiency after many years of inactivity.

That was a very interesting challenge. I made four trips over the years to the Suez Canal. The Suez Canal Authority was very professional and did a magnificent job getting back in operation. I'm not talking about removing the ordnance. The Corps of Engineers had very

little to do with that. I'm talking about deepening, fixing the bypasses, and installing the communications and navigation control facilities.

Ours was a good team which did valuable work for Egypt and for U.S. business. We were there when President Nixon resigned. The reason I remember that is because he made the headlines, and our little group was mentioned elsewhere in the same Cairo newspaper.

Then I was sent to Russia twice—once as part of PIANC and later in conjunction with a program dealing with housing and other construction. HUD [Housing and Urban Development] took the housing and the Corps took other construction. The other construction was a much bigger piece of the pie than just the housing because it included all the dams, waterways, power, and everything else.

Q: While you were director of Civil Works, didn't the Corps begin to think more seriously about nonstructural solutions to water resources problems?

A: Yes, the accumulated effect of the absence of support for new dams, the problems of Lock and Dam 26, the incessant oversight by the environmental communities all led to a belief that if we are not going to be allowed to solve problems by building something, maybe we can solve them some other way.

It turned out that there was an authorized project in Littleton, Colorado, to build a floodway



General Morris with the head of the Suez Canal Authority, Mr. Mashour Ahmed Mashour, in the summer of 1974. The canal is in the background.

downstream from Chatfield Dam through that community. The citizens objected and asked for the money to buy the land, move houses out if necessary, and leave it alone. Well, that didn't sound like a bad idea. Economically it didn't look too bad either, after we checked it out.

Our problem was an absence of any authority *not* to build something. The congressman from Littleton, Colorado, at that time was Bill Brotsman. Obviously we needed some special legislation in the case of the Littleton project to allow the Corps of Engineers to use the money which was otherwise appropriated for a floodway to solve the flood problem with a nonstructural solution by buying land, et cetera, et cetera. I don't remember the exact wording, but that was the thrust of it. That worked out fine. People in Littleton were happy.

Later on, Section 22 in the next Water Resource Development Act authorized the Chief of Engineers to consider nonstructural solutions to floods and other water resource problems. That was a landmark event and Mr. Brotsman's assistance was crucial. Later, he became Assistant Secretary of the Army for Personnel at the same time that Veysey became Assistant Secretary of the Army for Civil Works. Well, nonstructural solutions were neither understood nor popular in the Corps initially because our people had grown up building things. Actually, we did accomplish several major water resource improvements with nonstructural solutions: Charles River in Boston; Indian Bend Wash in Scottsdale, Arizona; Prairie du Chien, Wisconsin; and others. The philosophy of nonstructural solutions worked, and I think as much as anything else, it did give us a platform to approach the public with an alternative to constructing a dam. Nonstructural solutions grew out of the broader issue of environmental concern. The urban studies mentioned earlier were an example.

Another example of the emerging influence of environmental concern was the Cross-Florida Barge Canal—a landmark case in which the Corps was involved. There were two separate



General Morris gave an address at the opening ceremony of the Permanent International Association of Navigation Congresses (PIANC) in Leningrad, U.S.S.R., on 5 September 1977.

environmentally sensitive projects simultaneously in the public arena. One was the Alaska Pipeline and the other was the Cross-Florida Barge Canal. General Clarke had positioned the Corps very well to do the Alaska Pipeline project. In fact, he and I flew up there in early 1973 to recon the route of the pipeline with the understanding that the Corps was going to oversee the construction.

At that time, Dr. Pecora of the Department of the Interior felt the Corps should do it. He died, and President Nixon replaced him with a Mr. Whittaker of the White House. Two things happened rather quickly after that. The president stopped the Cross-Florida Barge Canal, and Alyeska, a nongovernment agency, was organized to oversee the construction of the Alaska Pipeline. I don't know whether the Cross-Florida Barge Canal was sacrificed so that the Alaska Pipeline could proceed or what, but at any rate that's what happened.

Along the way of stopping the Cross-Florida Barge Canal, the president did something which led to an important Supreme Court decision. The Congress had authorized this project and appropriated money for the Executive Branch to build it. The president had unilaterally decided not to build it and impounded the money. In the final analysis, the court ruled that the president of the United States does not have the authority to impound the money without first notifying the Congress, thus making the money available for use elsewhere. In other words, as executive, he couldn't turn his back on the instructions of the legislature. That was an important decision. Even so, the Cross-Florida Barge Canal was dropped for the wrong reasons—I believe. The publicity said it would ruin the fresh water aquifer. It would not.

Emotion in Florida was high. Martin Heuvelmans from Florida wrote a book [*The River Killers*] about the Corps of Engineers. He said that the Corps of Engineers had ruined Florida, that we drained all the rivers, and we had controlled the flows in such a way that the wildlife was perishing and the land was going to pot, so to speak. Heuvelmans was brought to New York to appear on the *Today Show* about his book. He gave the Corps a bad time.

I was asked to come the next day and give the Corps' side of the story. I did that. My first appearance on national television, and I would just as soon it had been the last. I spent 10, 12 minutes live on the *Today Show*, countering Mr. Heuvelmans' comments in this book. I was interviewed by Frank McGee, who happened to be from Oklahoma, and he was very gentlemanly.

Heuvelmans had some points, however, that could not be ignored, particularly in the Kissimmee area—since we're now putting it back more or less like it was originally. As I recall, the root cause of it was a state program which the Corps inherited and finished. Even so, it doesn't mean two wrongs make a right.

The Cross-Florida Barge Canal, in my judgment, should have been built. Hopefully someday it will be. The environmental issues are delicate, but they are manageable, and the transportation aspects would be very valuable. The old saw about the only reason we were going to build it was to avoid submarines during World War II is not the basic point, it's just a matter of good transportation.

The whole scenario, though, of Lock and Dam 26, the Ohio River, and the Cross-Florida Barge Canal, et cetera did raise a question in my mind as to what was the proper water transportation system for our country. So we undertook, with congressional approval, a study to answer the question, "What would a national water transportation system look like?" I envisioned a map similar to the national interstate highway system to identify each element—extensions, deletions, and the description of the normal size and shape of waterway channels, locks, et cetera.

My hope was that Congress would then authorize the navigation plan as a single objective, therefore, when the Corps added an included segment, Congress would only have to refer to the approved plan and wouldn't have to go through the laborious process of justifying each addition as if it were a separate project to carry its own weight.

That study was finished after I became Chief and will be discussed further later.

Q: What about dam safety?

A: We'd had some dam failures throughout the country, not federal projects, but state and private. A piece of legislation was passed while I was director of Civil Works—the dam safety inspection program. Senator [John] Stennis called up one day, wondering how much money it would take. I told him I was reluctant to give him a number but finally figured there were probably 30,000 dams out there that we'd have to inspect at about \$3,000 a dam or something like \$100 million.

I came up with \$100 million but asked that the 30,000 dams be mentioned as well. I didn't know how many dams there were, and I didn't even know how much they were going to cost per dam, but at least we had the equation. The dam safety inspection program was established and estimated costs identified. Money was not appropriated, so we didn't do anything at that time. One of the first things that happened after I became Chief of Engineers was the implementation of that bill.

Q: Tell me about the Corps' participation in the Bicentennial.

A: We began to celebrate in 1975, so we put this together starting back about 1974. The Army had criteria for military activities, but what was the Corps of Engineers going to do for its public works role? I asked General Gribble at that time if it would be all right if we had only one primary activity, and that I would like to spend \$1 million on it. He didn't object. The Congress authorized us to spend up to \$1 million of otherwise appropriated funds for the Bicentennial. The plan was that the historical role of Congress in the public works program would be identified.

Lieutenant Colonel Bob Benning was working for me at the time, and I gave him this task. Bob was an outstanding visionary who could get a job done. He had been in Kansas City District. He suggested he not be burdened with a committee. We decided to look at the old *Sergeant Floyd*, a work boat in the Missouri River Division. I had known the boat while there, and it was about to be junked. Major General Andy Rollins, Deputy Chief of Engineers, was anxious not to let the *Floyd* be scuttled, so we had a strong support up front and were able to get an okay to make a traveling museum using the old work boat.

Benning contracted to refurbish the *Floyd*; put a barge in the front of it; paint everything red, white, and blue; and install a six-speaker, six-screen visual setup to give the history of the Corps, its nation building and water resource development roles. It became a traveling theater. A barge platform in front was used for local entertainment. This exhibit went many thousands of miles through the Mississippi, its tributaries, and the Gulf. Several million Americans visited the *Floyd*. It was very good. Benning deserves a lot of credit. A song was prepared, "Let Us Try," an environmentally sensitive song. We put a calliope on the boat to play this song along the river either as a waltz, in a Dixieland style, or as a march. People would gather at the dock and it was just—it was a good piece of work.

The Corps won the Silver Anvil for the effort. The Silver Anvil is a national award for public relations. Competition included Gulf Oil, Ford Motor Company, General Electric, other big companies, even the *National Geographic*. Naturally, we were very pleased to be chosen in our class.

When we moved to the Pulaski Building, we relocated the exhibits of the *Floyd* into the visitors center in the new Chief's office. That visitors center has been replaced.

The Bicentennial program was a highlight event during my tour as director of Civil Works.

Q: In addition to Hurricane Agnes, were there other national emergencies while you were in Civil Works?

A: Agnes was only the beginning—we didn't escape having other national emergencies. The year after Agnes [1973], the Mississippi River suffered a serious flood. General Noble had his hands full as the Ohio flooded, along with the upper Mississippi and the Missouri, and New Orleans was in some serious trouble. There had not been a flood on the Mississippi River for 21 years, and the historical average was every seven years. So we had one in 1973 and another flood the following year. The two in a row brought the average back down to about seven years.

In the process, the old river structure proved to have very serious structural difficulty. We realized it had to be repaired and possibly replaced. Planning began and proceeded until now there is a new auxiliary structure. That flooding reemphasized that the Atchafalaya is probably the most environmentally sensitive region of this country.



The Corps of Engineers vessel, Sergeant Floyd, sailed the inland waterways to celebrate the Bicentennial in 1975.

Q: I would like to ask a follow-up question on the Section 404 program. In the court case, *Natural Resources Defense Council, Inc. v. Callaway*, the judge ordered the Corps in March 1975 to expand its definition of “navigable waters” and its Section 404 jurisdiction. Did the Corps get much guidance from the Ford Administration at the time on how to implement this court decision expanding jurisdiction?

A: Not unless you consider the Office of Management and Budget—an office within the Executive Branch. OMB carefully coordinated the EPA’s and the Corps of Engineers’ programs.

We worked with EPA. As mentioned, our man was Brigadier General Ken McIntyre, then deputy director of Civil Works. He did a great job on this. We had many meetings developing draft procedures to announce in the *Federal Register*. After review by OMB and publication, General McIntyre with EPA people conducted public hearings all over the country. Rebecca Hamner represented EPA.

Ultimately, the hearings were finished, the regulations became official, and the procedures were adopted. Those procedures have held up fairly well. There’ve been modifications redefining the authority of both EPA and the Corps. The final “go” or “no-go” authority rests with EPA, properly so, I think. My recollection is that the efforts of the Executive Branch to implement that new law were thorough and involved many man hours over a rather long time.

So to answer your question directly, there was no strong guidance. The principal players—the Corps, EPA, and OMB, particularly the Corps and EPA—formulated this process and then went about the business of doing it. It worked.

Q: I followed up on this because in some ways this period is pretty critical in the history of the Corps from then till now—

A: Yes.

Q: —because the environmental programs become such a big and important activity.

A: Well, you’re right. It turned out, as I may have mentioned earlier, the Corps’ load of only a few thousand permits a year soon jumped to tens of thousands. The Corps showed up wherever there was development in a wetland or navigable stream.

I don’t think it’s a job the Corps would have gone out and asked for, frankly, but it was fortunate that the Corps got the job, in my opinion. We’ve taken a lot of heat over the years, but the mission clearly emerged from the Corps’ role in water issues and demonstrated its ability to perform well in regulating and implementing the national objective in environmental matters.

After a few years, the environmental community preferred that the Corps keep this responsibility because it had done a good job and was fair. An alternative was to give the whole thing to EPA, and it’s my recollection that the public as a whole, and the environmental community specifically, preferred the Corps to keep it.

This program gave the Corps a strong position in the growing national trend towards environmental protection, and it continues to put the Corps on the proper side of the issue.

Q: It meant quite a few internal changes to the Corps as well, didn’t it? A lot of new disciplines were brought in.

A: Well, NEPA did that earlier. The regulatory program had a tremendous impact on and increase in the O&M manpower situation and the need to train people to do things they hadn’t done before. The administration of the program became a very big challenge and subjected

the Corps and then the Executive Branch to a lot of criticism by the Congress because we weren't getting the permits approved in time. People were complaining about that. So as time went on, the authority to approve permits was re-evaluated.

There has been a lot of improvement. Since I've retired, Secretary [Bob] Page, Assistant Secretary of the Army for Civil Works, was very much involved in trying to streamline the process. That's still going on. So it goes back to the fact that there was once a rather inactive program that just exploded.

Q: Within the Corps it required a change in the Corps' culture too, didn't it?

A: Yes, the regulatory program was another piece in the growth of the O&M side of the Corps, the operation and maintenance side of the house. You may recall that early on in the civil works program I had been approached by some of our senior staffers to get out of the O&M business. General Cassidy, according to Joe Tofani, is credited with saying he didn't become Chief of Engineers to be a plumber. In other words, the implication was the Corps wasn't here to do O&M work, it was here to do engineering, build things, and all that good stuff. Well, the fact is that by 1975 we had built most of the program, and early on in the 1970s the O&M program began to overtake the construction program in dollars.

So the relative position and strength of O&M in relation to planning, design, and construction was evolving, and the culture of the Corps changed accordingly. The Corps' heavyweight engineering and construction role had declined steadily while its O&M program had grown steadily. To have given up that mission would have been a serious mistake.

The regulatory program has proven the wisdom of keeping the Corps in the operation and maintenance business, because having the base on which to place the regulatory program helped the Corps survive and become active in environmental matters to include hazardous waste as well as regulatory issues. The change in the culture of the Corps started before the regulatory program; however, the regulatory program broadened its understanding and value.

Another part of the cultural change within the Corps was the privatization philosophy which reduced the Corps' operation and maintenance of certain activities the private sector could do as well and cheaper. So it wasn't only the transition from engineering, design, and construction into O&M, it was also changes within the O&M community to using contracts in place of hired labor.

Personnel shortage was one of the problems created by the regulatory program. The Corps never received the proper number of people to do the job early on; however, in all fairness, the Corps was allowed to retain spaces they otherwise would have lost without the regulatory mission.

Q: You supported—or you talked about the privatization initiative quite a bit too, didn't you? Another controversial internal—

A: Well, it's always controversial—internally. I had concluded we could privatize hopper dredging if the industry would agree. We tried before, and they wouldn't do it because of the investment cost.

The idea to privatize hopper dredging had several objectives. One was to get the Corps some improved equipment. Another was to generate spaces needed elsewhere and also to pass the bulk of the maintenance of the waterways and ports over to private enterprise. Pipeline dredging had already gone through that process.

I also believe that the Corps should contract the operation and maintenance of the waterways—the locks and dams. Also, there's no reason why the Corps can't contract people to run power plants.

Q: The Corps was still using government employees for a long time to lay mat on the Mississippi, wasn't it?

A: Well, they did as long as I was there. That was one of the things we did consider carefully, but because the work was so specialized, private industry was not yet ready to do it by contract. So the best thing was keep it.

Back in the 1930s and earlier, even earlier, there was limited or no capability in the civilian community to accomplish many of the tasks needed to execute the Corps' programs, so the Corps did it with its people and with hired labor. As the nation's private capabilities reached adequate levels in various fields, including construction and engineering, the federal government moved aside. Well, mat laying on the Mississippi was one of those areas in which the civilian industry had not quite yet gotten the capability to do it, so the Corps kept it.

There's a lot to that question. We should not privatize everything. The Corps should keep in-house enough requirements to maintain an engineering capability and enough construction to keep our contracting and construction management capabilities, et cetera. So there is a balance in there.

In the period from 1970 to 1980, I really do believe more things happened to change the Corps of Engineers than in any other period in recent times: The National Environmental Policy Act followed by all the regulatory regulations that came along; the change in the Corps' workload in the civil works field from new work to operations; the arrival of the Assistant Secretary of the Army for Civil Works; the impact of rebuilding the Army's physical plant to suit the all-volunteer force; the growth of American presence internationally, beginning after World War II and continuing through the 1970s in various countries; all the congressional and legal battles that went on to determine what various new laws meant to name a few. All together these involved a period of about ten years and created a tremendous amount of turbulence and change.

Your comment on the culture is absolutely on target. The Corps in the late 1980s and early 1990s became a far different organization than in 1960 when I went to Tulsa, even when I went to Omaha in 1970. You know, the old-timers speak of the "good old days" when discussing or complaining about change. There's little they can do about it, however. It's going to happen.

Now, I think the important fact about all this is the Corps has survived. It's still looked upon and respected at home and abroad as a premier source of engineering, construction, and management talent.

We're roaming around here a little bit.

Q: Yes, but I want to roam just a little more. One thing that came to mind as we were talking—I remember seeing a quotation from General Heiberg, sort of fondly but with some frustration, I think. He referred to that "great inertia-ridden organization, the Corps of Engineers." Looking back at your career, you came out of the experience of a changing organization. Some of the leaders of the Corps made the transition, and it was a difficult transition, and some people took a lot longer. I guess what I'm saying is, "Why did you perceive the changing environment and others were slower?"

A: General Heiberg's observation is not wrong, but determined leadership based on good clear goals can move the organization. Perhaps based on my background and earlier assignments, I was able to look farther down the road to identify goals for the Corps to evaluate what was going to happen, based on trends and the warning signals of change, and then try to come up with a plan or a concept which would allow us to turn those changes to our advantage, if possible, at least to be prepared for them.

One of the things that happened during the decade of the 1970s was the various reorganization plans for the Executive Branch. We really had to do some visionary thinking to get ourselves onto a program which would allow us to walk the tightrope between not being insubordinate to the commander-in-chief and yet protecting ourselves from being demolished. That happened over and over again with the frequent reorganizations of the Executive Branch while I was director of Civil Works. One approach was to form a Department of Natural Resources as one of four super secretariats. The Corps was on the block. Later, of course, President [Jimmy] Carter had even more serious plans for the Corps.

I like trends. I don't like snapshots of where we are as much as I like to see where we have been to get here. From that background we can attempt to determine where we are or should be going.

You asked about this transition. Once NEPA was passed and became law, and because of General Clarke's leadership, I soon realized there was no need to fight the program. In fact, the Corps needed to team with and support the program and, out of it, try to adopt a strategy which would be best for our institution and, because of our belief in the institution, for the country. I think that's what we did as best we could considering that every day we plowed new ground.

The Corps could not be where it is today, in the public's mind or in its value to this country, if it had fought or tried to stay with the pre-1970 culture. So the challenge was to detect the need for change and react smartly. I don't think I've answered your question very well. For sure, numerous excellent visionary people helped; and, together, given time and some good luck, we found ways into the future which would accomplish those things.

Another related topic I need to add is training. While I was in Civil Works, as a follow-on to my experience in Omaha, I was very much concerned about the training program in the Corps. I thought there was a lot of duplication. Districts were often teaching the same subjects differently. John Bryson, who had handled personnel in Omaha, was given a special assignment to analyze the training program in the Corps. He issued his findings in a purple book, you may remember. The sum and substance of that was to set up at Huntsville a university-type training program. We eliminated duplication, saved many dollars, improved training, and accelerated the move into the environmental program requirements. Cleaning that up was, to me, a major management improvement in one specific field.

Q: Any more comments about being director of Civil Works?

A: I was very happy in Civil Works. In many ways, it's the best job I ever had. At the time I had authorities that may not still be there. I had a staff that was outstanding, and I'm sure they still are good staffs. I had good bosses. General Clarke was truly an outstanding man, as was General Gribble. General Gribble gave us room to operate. I remember clearly, though, when General Gribble was chosen to replace General Clarke, I received a call asking me if I'd like to be on the Tennessee Valley Authority. I called my friend Don McBride, and he said, "Jack, if there's any chance you're going to move up to deputy or Chief, I'd say turn it down." I did.

The same day I had a call from a friend of mine in OMB, who said, "I hear you're going to retire."

I said, "I have no idea, no intention of retiring."

He said, "Well, that's the word out there."

Ken Ballou, Under Secretary of the Army, with whom I had worked closely on the public works business, had told General Abrams that I might be unhappy because I didn't get to be Chief. I don't know where this all started, but I was surprised by this reaction.

I was called over to General Abrams' office. Now, keep in mind I'd already had one call about the Tennessee Valley thing and another call from a guy in OMB that morning. That afternoon I went to see General Abrams, and being a very forthright person, the first thing he said to me, "Morris, I've been hearing some nice things about you. Are you planning to leave the Army?"

So I said, "Sir, this is the third time I've heard about that same subject today. If you're trying to tell me something, I'd like to hear about it," or some words to that effect.

He said, "No." Then he asked, "Where is Kerr Dam?"

"It's down here in Virginia. It's a Corps project."

"Well, I'm thinking about going down there for a couple of weeks. What do you think about



From left to right, Don McBride, former assistant to Senator Robert Kerr; Robert Kerr, Jr.; and General Morris when he was Director of Civil Works.

it?"

I mentioned that I thought that was okay, but the place was so close to Washington he couldn't get away from his business.

I suggested he ought to go to Fort Peck. He said, "Fort Peck, is that one of mine?" I said, "No, sir, it's one of mine." I explained it all to him, about being in the upper reaches of the Missouri River in Montana, that we had a good project man and horses for his daughters, et cetera. He said, "How do I get there?" "Well, if you can get to Omaha, the Corps' plane can get you to Fort Peck." So we fixed up the two bedrooms that had the baths in the lodge. Abrams stayed two weeks and had a great time.

I'd call out every day or so and see how he was doing. Don Beckman, our project manager, was a fine man. One day as I called Bob, he told me that General Abrams had said to tell Morris to quit checking up on him.

When General Abrams came home, he had the swearing-in ceremony for General Gribble, which I attended. General Abrams said he had a wonderful time. You know, he died shortly after that because he had cancer. Sometime later I saw Mrs. Abrams at an affair in New York, and she explained that going to Fort Peck in Montana was one of the best things that ever happened to her and the family. She had no idea that the Corps of Engineers did the things they did and had such wonderful people as Beckman and his team.

I was very proud of the Corps because it made such a nice impression on the Chief of Staff and especially his family. That was quite a compliment. I always liked Fort Peck, and having the Chief of Staff up there for a couple of weeks was a good thing.

My assignment to OCE as the director of Civil Works was a crucial duty for me for several reasons. In many ways this was my most challenging and demanding job in the Corps and surely one of the most rewarding. I was blessed with excellent career experiences for the work which lay ahead and was most fortunate to serve under Lieutenant General F. J. Clarke and his successor Lieutenant General Gribble.

Most important, however, were two watershed events which occurred during the period and which forever changed the Corps and the public works program of the Department of the Army. One was from without and the other internal to the Army.

Having been passed two years prior to my arrival as director of Civil Works, NEPA and its executive agent, EPA, had found their footing. New environmental procedures impacted every aspect of the public works program. Getting the largest public works agency—the Corps—in step and a positive player in the new arrangements tested every member. Some were not willing and others not comfortable to adjust. Nevertheless, the public works foundations of the Corps of Engineers for the present and the future were laid during the first half of the 1970s decade.

The internal development was the activation of the position of the Assistant Secretary of the Army for Civil Works. The effects of this are still emerging and will continue in the years ahead. General Clarke was concerned that this position would generate fewer positive than adverse values. He appears to have had good reason for his concern. To date, the most apparent effect has been the steady intrusion of the ASA/CW into the fabric and authority of the position of the director of Civil Works and more seriously that of the Chief of Engineers. For the ASA/CW to invade the command and control arena of the responsible commander is wrong, and unfortunately such intrusions appear to be growing in number and depth.

In my view, the external event—NEPA—provided a new and productive challenge to the benefit of the Corps of Engineers and, in turn, to the stewardship of the nation's resources. We may have objected and even resisted the change in direction, but time has proven the new mission to be good. Conversely the position of the ASA/CW, which was accepted with expectations or, better stated, with hopes, tends to distract rather than foster the Corps' leadership ability to perform with greatest effectiveness. The latter is unfortunate because there is great opportunity for ASA/CW to assist and advance the water resources program and the Corps' role therein and to the Army.

Deputy Chief of Engineers

Q: Shall we turn to the position of Deputy Chief of Engineers, which you moved into, I think, in August 1975?

A: Well, let's see. How did all that come about? It was June, I believe, because I was doing both jobs for a while.

Danny Raymond was the deputy, and when he decided to retire I had been in Civil Works a full three years. I was available. Of course, I think and hope General Gribble brought me into that job as deputy because he thought I would be helpful to him and the Corps. General Gribble picked General Graves to be the director of Civil Works. Graves was not available for some time, so for about 60 days I remained director of Civil Works and also the deputy.

During this same time, we had an unfortunate event occur. In June, West Point Dam was finished. The Secretary of the Army was [Howard] "Bo" Callaway, whose home was near the West Point Dam. So the dedication program highlighted a speech from Secretary of the Army Callaway.

Since General Gribble was not able to go, it fell on the deputy to accompany the secretary. We flew down, Callaway and a group of congressmen, and were joined at the airport by General LeTellier, the South Atlantic Division engineer, and another group of congressmen and their wives. Altogether we were about 35. We were loaded into a magnificent, brand-new bus with the elevated seats in front, a lounge area in the rear with tables with swivel chairs on each side, sofas across the back, some mirrors, closets, and a refrigerator. It was very plush and a nice way to go the 35 miles from the airport to the vicinity of the dam.

All the ladies and most of their husbands sat up front. The secretary—whose wife was in the front—and the bachelors sat in the lounge. It was a rainy afternoon. A logging truck heading in the other direction came over a hill, spun out of control, hit the bus head-on, killing both drivers. The bus skewed around, and the back end slid halfway into a ditch. Fuel was spewing to the ground, and glass and mirrors broke and flew all over the interior—a serious situation.

I was in the back with the Secretary of the Army, Congressmen [Bob] Jones, [Jack] Flynt, and [Walter] Flowers, General LeTellier, and some others. None of those in the back were hurt badly, although Congressman Jones seemed unconscious, General LeTellier had a cut on his face from flying glass, and the secretary's face had been cut. I was uninjured.

Lieutenant Colonel Freeman Cross, who was Deputy District Engineer in Savannah and had been a company commander with me in Korea, had been standing up when this happened. Once he got to his feet, he crushed open the partition between the front and the back. I went up front and found a real mess. I mean, it was bad news. People had been thrown all around, the seats had been broken loose, the driver obviously was dying if he wasn't dead. I tried to help him, but he was just smashed between the seat and steering wheel. Fortunately, the Corps

had a lead and a trailing vehicle with radios. In minutes not only the Corps but the police were there, and helicopters from Fort Benning began to arrive.

I was the senior military person. Major [Gary] Lord, a Corps officer from the office of Legislative Liaison, accompanied the congressmen. So we had LeTellier, Cross, Lord, and Morris from the Corps. We had the congressional group plus Secretary Callaway and wife.

Congressman Tom Bevill had been sitting in front with his wife, and when the impact occurred the bus door flew open. I understand he just sort of slid out underneath of the little railing in front of the first seat and outside the door. I think he had a couple of broken ribs, but he was lucky. Mrs. Bevill was shaken up but not hurt. I immediately told Cross, who was in pretty good shape, and Lord, who had a bad cut on his leg but was mobile, to have the men with their wives sit on the ground beside each other so that the wives and the husbands would go to the same place when the ambulances arrived.

Then we began to inventory the damage. Mrs. Nichols from Alabama had a seriously broken ankle. The aide men put one of those plastic air-inflated emergency splints on her. We finally got everyone out, paired up, and sitting on the side of the road in a drizzling rain, dazed. The inside of the bus was covered with debris, shoes, purses, et cetera. It looked like a war zone.

Mrs. Callaway while standing, talking to her husband, suddenly looked like she was going to collapse. She was laid on a stretcher and as soon as possible, onto an Army helicopter with the secretary and myself. By the time the helicopter came, everything was about as orderly as we could get it thanks to Major Lord and Colonel Cross. LeTellier was left behind with instructions to be sure everybody in the military got to the hospital and received a physical checkup.

Because I was in uniform and Callaway was in civilian clothes, the MPs were giving me the attention. I explained that the other two passengers were the Secretary of the Army and his wife. That took care of any concern for me!

Once at the hospital, I wanted to report the accident. Having worked in Legislative Liaison, I had some feeling for how this all worked, so I told the operator to get me the White House on the phone. She was kind of funny because she said, "We don't have a White House at Fort Benning." I said, "No, I want the one in Washington." After a brief gasp she did a fine job.

The phone was answered by Jack Marsh, who later became Secretary of the Army. This was President [Gerald] Ford's Administration, of course. I told Mr. Marsh about the accident and that I wanted to be sure he heard from me before it was on the television and on the radio. I reported we had two people killed and we had some serious injuries but it looked like the congressmen and the ladies would be all right. Congressman Bevill was in the hospital along with Congressman Flynt and Congressman Jones. Flowers was okay, as I recall. I retold Mr. Marsh that the secretary was all right and that Mrs. Callaway's back was bothering her. At any rate, I reported all this to Mr. Marsh and he thanked me.

Within five minutes, the phone rang. It was President Ford. I talked to him a moment, then put Secretary Callaway on.

We finally got to our lodgings near the dam late that evening. Having been assigned to Savannah District years before, I still knew many people who were there. They had had certain things planned for us that evening, which didn't occur, but we did have the dedication the next day. The secretary was quite sore, as most people were, but the dedication occurred as scheduled.

Personally, I did not have a bruise. The reason was simple. I was sitting in a swivel chair with its back toward the front of the bus. I was looking out the back of the bus, so to speak, and when the impact occurred that chair just swiveled so that all of the impact went right into the back of the chair, which was cushioned. Congressman Flowers, who was sitting across from me, came flying over the table toward me.

It was a bad experience that took a lot of zip out of us for a few days. Then we had the investigations because of the people involved.

General LeTellier finally submitted to a physical exam to learn, as I recall, that he did have a slight fracture of his shoulder. Cross was okay, Lord came out of it all right. The most serious passenger injury was the lady [Mrs. Nichols] whose foot was broken badly.

Early on after I became Deputy Chief, General Gribble asked me to go to Italy and Saudi Arabia, take a look at that situation, and see how we were handling it. Colonel Torrey Williams, Mediterranean Division engineer in Livorno, Italy, in preparation for our visit, developed his plan for managing the Saudi program. I was accompanied on that trip by Fred McNeely and Lee Garrett. I'd known Fred from my Goose Bay, Eastern Ocean District days and in Civil Works. He knew the military construction business from top to bottom. I had some earlier association with both Garrett and McNeely, but I really got to know them on this trip. They were truly outstanding assets to the Corps' team. The years to come proved their worth over and over.

Lee and Fred certainly had much more in-depth questions for Colonel Williams about how the plan was going to operate than I did, but I came to one conclusion during the outstanding briefing. Colonel Williams wasn't moving his headquarters to Riyadh fast enough. So on the way out to the car to leave, I congratulated Torrey on his great briefing. Also, I said I was going to recommend to the Chief of Engineers that the date of 1 July 1977 when Williams wanted to put the flag in Riyadh be moved to 1 July 1976, which was ten months hence and a full year sooner than he'd planned. I said, "Now, you will have an opportunity to rebut that to the Chief, but that's what I intend to recommend."

The logic for the position was important. While we managed earlier overseas programs successfully from the U.S., I felt we had to have this headquarters in Riyadh quickly. The reason was fundamental—we were to spend the Saudis' money, and we should have our head of operations as close as possible to the people putting up the money. It was just a question of time until they were going to want to know what happened to their money, and they'd object to going back to Italy to ask these questions. Besides, the work was in Saudi Arabia, and I wanted to have the headquarters in place before the workload developed into a really heavy management and control burden.

Williams was not too happy about a one-year curtailment of his plan, but it prevailed. Brigadier General [Richard] Wells became the first commander of the Middle East Division headquartered in Riyadh, Saudi Arabia.

Colonel [George] Gray was in Saudi Arabia as district engineer. He was a man you could put at the end of the line and not worry about getting the job done. He wasn't all that thrilled to have somebody move in on top of him.

My deputy tour was only one year. I had several articles prepared for *Water Spectrum*. One was called, "Our Troubled Waterways," as I recall [see Appendix A]. Then there was an interview about my civil works, what I saw for the future. There were some pretty interesting things in there, particularly on the wetlands, which in those days wasn't a headline item but which I had thought would become a major problem. We were still tidying up the 404

program. General Gribble was instrumental, as you may recall, in getting us to call the conference in New Orleans to come to grips with the matter.

Q: Would this be a good place to talk about Marco Island?

A: Yes. Marco Island became a major issue. I think the two projects that took the most time, as deputy, were Marco Island and, again, Lock and Dam 26. What happened at Marco Island? As I recall, there were several elements of the Marco Island Development plan—Areas A, B, C and D. Area A was developed. The developers needed a permit to start B and D, and to finish C. That's the concept, as I recall.

The district engineer had recommended the permit be issued. The division engineer recommended that it not be issued. The key element of the decision concerned the red mangrove—98 percent of the red mangroves in the United States are in the state of Florida. This particular tree is critical to the food chain for the shellfish in the Gulf of Mexico. The environmental community was very much concerned that Marco Island was going to destroy too much of the red mangroves. The governor of Florida wanted the permit issued, and that's normally a key factor. I think on that basis the district engineer said, "Okay," but the division engineer, for a variety of reasons, said, "No." One reason, I think, was that this matter was so important it should be decided in Washington. If the district engineer had turned the permit



MG John W. Morris was sworn in as Deputy Chief of Engineers on 1 August 1975 by First Lieutenant Yuvonne Balentine, the junior officer in OCE. Lieutenant Balentine wrote on the picture, "Congratulations, sir. Keep working at it and you may become Chief one day."

down, that would have been the end of it because his decision is irrevocable. The division engineer's position could be evaluated. General Gribble studied the matter and turned it over to me for a recommendation.

I took the file and spent the entire weekend with it. Finally, I recommended the Chief approve finishing Area C since most of the damage had been done and to disapprove the application for Areas B and D. My rationale was simple. By law, every state was required to have a coastal zone management plan. The state of Florida had not yet complied with that law. The governor of Florida had said that if this permit were issued, he would not allow any more destruction of the red mangrove. In the absence of a state law or a plan, there was no reason to think that the next governor would be bound by this governor's conclusions. So my rationale was that until the state of Florida had a coastal zone management plan, the federal government should exercise its position and deny the permit even though the governor wanted it to be issued. My belief was that a well-conceived coastal zone management plan would include necessary safeguards for red mangroves.

That decision created quite a stir when announced. It was a landmark decision, and it did have a lot to do with the coastal zone management plan program. You may recall that during my Civil Works times we made several landmark decisions on permits. I don't think we should try to cover them all—Bald Head Island, Block M, and a series of them. Marco Island was only one, but one of the more dynamic because of the money that was involved in building Marco Island and the political aspects.

General Gribble sustained the recommendation, and that's the way it came out as I can recall. I don't know what's happened since then.

Q: Lock and Dam 26 came up again when you were deputy.

A: As deputy, I was chairman of the Board of Engineers for Rivers and Harbors. It seemed that no matter where I went, Lock and Dam 26 followed along. Lock and Dam 26 arrived at the board for evaluation when I did. There were two key issues. One, of course, was the hullabaloo about a 12-foot channel. The design called for 12 feet of water over the sill to allow a tow to go in and out of the lock safely even though the river depth was for a 9-foot channel. The additional 3 feet caused the opponents to claim the Corps was going to make the river channel 12 feet deep and increase the tonnage. That was one part of the problem.

The project before the Board of Engineers for Rivers and Harbors included a 110 by 1,200-foot lock on the Illinois side near Alton and another 110 by 600-foot lock on the Missouri side. As you recall, the Corps did not have authority to build a structure which would increase the capacity of the waterway. Congressional authorization would be required.

The studies had shown that the projected traffic would require a second lock in years to come, but the current need required only the 1,200-foot lock. So technically speaking, we couldn't go for the second lock without having analyzed the impact of the extra traffic on the waterway. We knew that the 1,200-foot lock was okay because it wouldn't allow the traffic to be increased on the upper Mississippi beyond the old Lock and Dam 26 capacity.

So the problem was how to structure the language in the legislation that would accommodate the second lock without violating the NEPA, which required an environmental impact statement before authorization of a federally sponsored project.

As you recall, this Lock and Dam 26 project problem started while I was director of Civil Works. It didn't end until after I became deputy chief. I finally took the language problem home and drafted wording which was ultimately okayed by our counsel. It didn't authorize a second lock but allowed Congress to recognize that at some future date there might be a

need and if justified by the required EIS and other analyses, then it could be built without further authorization by the Congress. I don't recall the exact wording so I can't be too precise, but that was the thrust.

Q: The review by the Board of Engineers for Rivers and Harbors was a very touchy subject too, wasn't it?

A: Yes, and as indicated above, the problem became more sensitive when I was Chief. This entire Lock and Dam 26 subject might have been handled here as a separate topic, not piecemeal as part of the various positions that I filled.

Q: What other duties did you have as deputy?

A: Also as deputy, I represented the Chief frequently on command inspections and at staff meetings in the Pentagon. Every major element got a command inspection by one of the directors or the deputy. General Gribble used the deputy on those of particular interest to him. He sent me to Europe to look at EUD, which was relatively new as a division.

Frank Koisch was the engineer who precipitated the engineer command's becoming the Corps of Engineers Europe Division. When I first arrived as deputy, Major General Lou Prentiss was the division engineer. I spent a lot of time on this particular visit with the senior military people. General [Fritz] Kroesen had the VII Corps. He and I had been classmates at Carlisle. You may recall General Ken Cooper was the deputy CINC, USAREUR [U.S. Army, Europe].

Our principal concern was the condition of maintenance of military facilities in Europe. I'd visited General George Patton, Jr., commanding general of the 4th Armored Division. The tanks were in the mud, and the barracks were beat up. I'd been in Europe, of course, in 1949 to 1952—25 years earlier. The facilities really were no better—perhaps worse in 1975.

So I came back with a fairly bleak report on the facilities situation and the command's concern about it. Cooper advocated a strong new program to upgrade facilities in Europe. I had little to do with the program, but that trip helped General Gribble to support it.

Q: What were your impressions of EUD as an organization?

A: Let me think about that. I liked it. It was under some unique contracting and management constraints because of the way construction was handled in Germany. Also, a number of the staff had been in Europe since the war. Too many. So Lou and his successors, LeTellier, Donovan and [Norman] Delbridge, dealt with this problem and corrected it. Initially that was a concern.

The workload grew as the program to upgrade facilities was financed. When Delbridge arrived in 1977, he asked for and was given a couple of hundred more people. I was Chief and Graves was the deputy at the time. The Europe Division grew and became a very active division with a nice workload and numerous contracts. Morale was good. I happened to be in Frankfurt on Engineer Day one year, and they had a very well attended and enthusiastic evening celebration of that event. It was a good division with a large unique job. EUD had no districts.

Q: It had been established in 1974. Until then, USAREUR had taken care of its own construction, so it only had a couple of years under its belt and had to prove itself, I think.

A: That's what happened. As mentioned, when I first visited Prentiss, he was really working hard to build the foundation for good U.S.-German contractor relationships. While in Europe, I visited every commander we served, Army and Air Force, just because of what you said. I

came back with a fairly comfortable feeling that the division would get the job done. I am sure history will give it good grades.

Q: What other initiatives did the Chief ask you to work on?

A: Soon after I became deputy, General Gribble asked me to set up a command management program similar to the one I had installed in Civil Works. So the process was started, and that was fortunate because when I moved up to Chief, the year of preparation made it much easier to pursue my goals for the Corps.

General Gribble also established a philosophy of "customer satisfaction" and often brought up the subject to his principals when we would go to the various directorates for the weekly brief updates. Today we hear customer satisfaction all the time in the public arena. General Gribble was a forerunner of that particular concept and all the implications that go with it. General Gribble from 1973 to 1976 was a splendid Chief of Engineers. Some people felt his experience in the Corps was limited, but he had been district engineer in Alaska and division engineer in the North Central Division. Also, he was very intelligent, exceptionally good with people, and understood the Army and the Corps. I felt it was the Army's shortsightedness that they didn't give him command of the Army Materiel Command and a fourth star.

While I was director of Civil Works, he set up the Research and Development Directorate and put all the laboratories under the chief of Research and Development. I had to give up the Waterways Experiment Station and some others. I certainly didn't want to give up anything, especially the labs, but I must say the move was correct and has worked out fine.

Based on General Cooper's advice and help in 1974, General Gribble pushed hard to establish the Assistant Chief of Engineers' [ACE] position with an office in the Pentagon. Next, military housing and all related staff functions were consolidated under the new ACE. Bill Gribble was on target and put in place the capability for the Corps of Engineers to become the engineer for the Army in every way. OCE could handle the entire real property function from the cradle to grave. This became an objective which impacted on my decisions later as Chief of Engineers.

Having the ACE's shop allowed the Chief of Engineers to do the staff work for the Chief of Staff more responsively and more efficiently. General Cooper was the first Assistant Chief of Engineers. The whole idea made eminent sense, and the Army staff understood his plan.

Q: There had been a Directorate of Facilities Engineering for a while.

A: General Gribble's idea also. The importance of facility maintenance to the Army warranted a separate staff element to manage this program. The Facilities Engineering Directorate removed the function from the Construction Directorate. Brigadier General Walt Bachus was the first and only director of Facilities Engineering. He started the "first annual facilities engineers conference" in Chicago. When I asked him about the title, he said, "We had to have the first annual so we can have the second annual."

Walter was a dynamic, enthusiastic, and effective director.

As deputy I began to realize there were many operational matters in OCE which should be done in the field. The headquarters people needed to spend their time making policy, getting decisions so the field could perform operations. So you'll find later that one of my first objectives was to get the Corps out of the operations business.

As we will cover later I expect, out of that came the Facilities Engineering Support Activity and the Water Resources Support Center, all at Belvoir.

General Gribble may not be a Chief who comes immediately to mind when you talk about Chiefs of Engineers. I don't know who does and who doesn't, but he did several things that were critical to the Corps as we now know it: The ACE, the Research and Development change, and the Directorate of Facilities Engineering. His "customer satisfaction" philosophy was a set piece as well.

He was an articulate gentleman. I only know one time when he seemed to be out of sorts, and that was—he just didn't want to go see the Assistant Secretary of the Army for Civil Works. I may have mentioned earlier that he felt that the director of Civil Works should be able to handle that office. Gribble was a man of few words and a clear thinker. When he didn't like the way the 404 program was going, it was very simple. He just called me up and indicated we had problems with the 404 situation and I'd better get it straightened out. That was about all he said. "It's not working right, I want you to get it straightened out."

Q: Would you characterize him as being a little hesitant on the environmental program? Was it something that he was reluctant to see the Corps get involved in?

A: I don't think so. He wasn't reluctant about straightening out the 404 program.

Q: Well, the Marco Island decision.

A: The way he operated on the environmental things was to have the staff do its work first. There's no question about that. Maybe he felt that he needed to bring the staff in on these environmental types of things because it was new ground.

Q: But he backed up the decision.

A: Always. Yes. No question about that.

Q: In terms of his relationship with the ASA/CW, did you ever hear him say anything that would indicate he feared that the ASA/CW might become more involved in the day-to-day operations of the Corps?

A: I would not be surprised if Fred Clarke didn't pass on to Bill Gribble his concern about the Assistant Secretary of the Army for Civil Works' position. Gribble believed, as I did, that the director of Civil Works should be the counterpart to the ASA/CW and as such should keep the ASA/CW out of the other business of the Corps. Completely. This would save the Chief for the Secretary of the Army on civil works matters. It made a lot of sense to do it that way.

The Chief had the military program, the research and development program, facilities, and other matters besides civil works to worry about. So the principle was clear and it prevailed through my term. As Chief, I never dealt with the Assistant Secretary of the Army for Civil Works unless I absolutely had to. Gribble, to my knowledge, only dealt with the ASA/CW twice in the whole time. So I think he probably realized that an erosion of that relationship would mean the Chief had to deal at a level where he shouldn't. If the Chief works at that level, he doesn't have the same flexibility in going to the Secretary of the Army and is distracted from his duties in supporting the Army.

There was no animosity between him and Secretary Veysey. That wasn't the problem. It was just the operating procedures, as he saw them. General Gribble was absolutely right on that.

Q: Was there a pattern to the duties that General Gribble gave you? Sometimes you see the "Mr. Inside, Mr. Outside" pattern, or was it more an issue at a time that he assigned to you? I mean, in terms of your working relationship with the Chief. Or maybe you weren't there long enough to really see a pattern.

A: He gave me specific requirements. Also, I carved out certain areas to oversee on my own. I kept a lot of people busy, I know that. The secretaries up there wondered what I was up to. I chaired the Board of Engineers for Rivers and Harbors. Also, I led command inspections, plus getting the headquarters of the Saudi program moved and producing the command management program he wanted. I was fairly busy as a deputy. I probably was busier than people realized. As I say, I kept a lot of secretaries busy.

Q: One follow-up question on establishing the ACE's shop. Did that lead to any overlap with the Directorate of Military Programs? Did the spheres of the director of Military Programs in headquarters and the ACE's office have to be carefully worked out?

A: Yes, they did and that'll come up a little later. The ACE's shop traditionally puts together the program for the Chief of Staff to present to Congress. Consequently, the ACE had to work very closely with the director of Military Programs. For the normal staff things such as training, military equipment, and policy matters, the ACE didn't have to be concerned about the director of Military Programs.

Q: We haven't talked about Tenn-Tom.

A: True, and we began to get rumors of cost problems when Danny Raymond was division engineer at the South Atlantic Division and later when he was deputy. He'd watched Tenn-Tom like a hawk and predicted it would become a real issue. He was right. During my term as deputy, the issue of the cost overrun of Tenn-Tom arose again, but not so much as it did later. General LeTellier succeeded Raymond at the South Atlantic Division. He briefed us on the cost growth and why it was happening. The environmental issue was very critical also at that time, and he mitigated as much of the environmental impact as possible. I went to Atlanta while I was deputy to get a detailed briefing on the progress and other various aspects that were beginning to evolve into major problems.

Q: Were there other important issues on the military side?

A: I can't remember exactly when it happened, but Mr. Veysey added to his staff a position to overlook the entire Army's environmental program, but principally to overlook the Corps' environmental program. On our own initiative, I had the Strategic Studies Group, Don Weinert, take a cursory look at what the Army was doing about the environment and came to the conclusion that the military wasn't doing very much. I remember reporting to the Army staff that NEPA applied to the Army as well as it did to everyone else, and that we had to be mindful how we operated within our installations. CERL [Construction Engineering Research Laboratory] began immediately to work up an environmental assessment worksheet and program for the installation commander.

The Army's early attitude seemingly was that training was more important than the environment. That mindset had to be changed. The Corps was early on in trying to highlight this problem, this mindset.

We made a survey of the Army and found that we had a long way to go. At the same time, you may recall, there was a big program, big move on to save energy. Funds were appropriated for an energy survey and we managed to get money for an environmental survey also, which the commanders didn't like because they felt that it was money they otherwise would have had for some other purpose.

My recollection is that the Corps of Engineers assumed leadership in opening the subject of environmental attitudes within the Army family. It has taken a while, but now the Army is onboard everywhere because, as I said, the commanders in the field in the 1970s felt training and military preparedness were more important than the environmental constraints on post.

Q: Going back to what you just said, is it true to say that for installation commanders, both facilities engineering and this environmental plan were issues that were important to them, but they didn't particularly want to concentrate on them?

A: I'd say the environment was something they thought was a lesser priority than training.

The reason the facilities engineer business kept popping up as a management problem was that most commanders wanted to control the post O&M money. If it wasn't for the fact that they wanted the money, it would have been a simple matter for the Chief of Engineers to become the facility engineer for the Army in an effective operational sense, not just in a staff sense. We never could and still haven't been able to get the installation commanders to release that money, relinquish the money.

The Corps can budget it, you know, and they put it in the program, but when it comes out, it's a post commanding general's to allocate. So they may have held hands off, you know, of the environmental needs.

Q: Because one of the complaints is that they want results they can see right away or very soon.

A: That's one of the reasons why, later on, we got into this one-stop shopping idea. To me it was just unreasonable that all the Corps' talent on the civil side of our house was not at least available on a reimbursable basis to help the posts. The one-stop shopping idea turned out to be a winner. The posts were getting immediate results. I mean, if they had a problem, if their staff couldn't handle it, the post commander or his representative could call up some district and get help. That started off as just a peanuts program. Now I think work worth hundreds of millions of dollars goes through that process.

It's improved the Corps' relationship within the Army, at least the Army's understanding. That's always been an educational problem, getting the Chief of Engineers' civil works mission to be part of the Chief of Staff of the Army's mission. I mean, those trails have not always even stayed parallel, much less converge. We'll come to that later, too, because we did a lot of work on that subject. I think some decent work.

Q: Maybe we could conclude today by getting your summary ideas about being deputy. As you pointed out, by the end of the time you were deputy, you knew that you were going to be Chief. That made it a little different, but how would you characterize the position of deputy and how you felt about the work there?

A: The position of deputy is directly influenced by the personality of the Chief. In the case of General Gribble, he was perfectly happy for the deputy to oversee the civil works program as his alter ego, basically to manage the aspects of the regulatory issue, the dredging problems, and all the rest.

He did not have a vastly different attitude toward the military programs, but he seemed to be a little more involved in the military directly. As far as research and development was concerned, having been head of research and development for the Army, he was very close to that. So my work as deputy involved those things which either belonged to the deputy by some kind of a regulation, or the things the Chief would rather have him do. In my case, the deputy position provided a great opportunity to get back "up-to-speed" on other than civil works activities in OCE, the Corps, and the Army as a whole.

As an overall assessment of the job, being deputy for General Gribble for three years would have been fine. The only problem I would have had, if any, could be my own personality. I'm

not too good as number two. I probably would have been happier as director of Civil Works than I would have been as Deputy Chief of Engineers for a three-year term.

There was one other thing about the deputy's job. It carries with it a certain prestige, you know. You represent the Chief on the Army staff for many important subjects. As deputy you're recognized much more than you were, say, as the director of Military Programs or Civil Works.

Q: Did you do any work up on Capitol Hill or did the director of Civil Works take care of that?

A: Yes. I continued to have a lot of communication up there because I knew so many people, but I didn't interfere with the directors of Civil Works or Military Programs in their relations.

Chief of Engineers: Internal and External Relationships

Q: Let's begin the session today by discussing your selection for Chief.

A: Of course, having been on the panel for selecting my successor, I can tell you that no one knows in advance who will get the job. Actually, I was out of the running when I became deputy in mid-1975. The reason was simply arithmetic. A person could not assume that job unless he could finish four years by the time he was 59, and I would pass the 55 milestone before General Gribble finished his four-year term in 1977.

When General Gribble elected to retire a year early I became eligible. I didn't learn he was going to retire early until after the board to select a new Chief had been appointed. A neighbor at Fort McNair casually mentioned to my daughter that General Gribble was going to retire a little early, and she told me. I was surprised. Next day I asked Colonel Russ Lamp, executive to General Gribble, "What's this I hear about the Chief retiring a year early?"

He said, "Well, that's supposed to be close hold, but since you asked, he reported to the Chief of Staff he'd like to retire this summer."

So that event made me eligible; and it then became just a question of whether or not my record would be attractive to the board. The Chief of Engineers is selected by a system established by legislation. No less than three, no more than five officers of equal or higher grade to the position being filled would consider all colonels and higher in the Corps of Engineers. The chairman normally is a four-star general. The procedure normally produces the names in a sequence. The Chief of Staff and Secretary of the Army can rearrange the names, but they can't add any. Nor can the president, for that matter.

There is a story going around about General Pick. President Truman had received a list to replace General [Raymond] Wheeler, and he kept sending it back. The Army finally asked him what was wrong with the list, and the president supposedly said, "Well, if you'll send me a list with Lewis A. Pick's name on it, I'll keep it." That may or may not be true, but it makes a nice story.

In any event, I heard from a fairly good source that I was among those recommended. My experience fit the needs of the Chief's job, as I've tried to explain in these interviews. Whether or not my performance in those jobs would support selection from among the other excellent candidates with other assets and talents remained to be seen.

Finally, my recollection is that about the middle of May, General Gribble came in one morning and said, "I want you to know I'm going to retire the 30th of June and you've been nominated to take my position. Until it has been announced, you can't say anything about it." In reflecting on it, I don't know when General Gribble decided to retire, but I have a feeling it could have been as early as Christmas in 1975.

General Gribble was a very private person, particularly about his personal affairs. You couldn't have a better boss or advocate if he liked your performance.

As I have tried to explain to people, becoming Chief of Engineers, in part, is a matter of timing. When you walk down the hall, if the door's open, you have a chance to go in. If the door's closed, because of a lot of reasons, you just pass by and you have missed it. In my case I was definitely on the way past by, but the door opened all of a sudden and I was given a chance.

In 1976 Henry Bellmon of Oklahoma was in the U.S. Senate. He had been governor of Oklahoma when I was district engineer in Tulsa in the early 1960s. We'd stayed close to each other over the years because of a couple of projects of national interest which he supported. He was also very close to President Ford at the time. In late May 1976, he and I attended the dedication of Kaw Dam in Ponca City, Oklahoma.

Senator Bellmon learned that President Ford had nominated me to the Congress to be the 44th Chief of Engineers the morning of the day of the dedication. Much to my surprise and to everyone else's in the audience of about 15,000, 20,000 people, Senator Bellmon said he was happy to announce that the next Chief of Engineers was going to be General Morris. Of course, I'd been district engineer when the project was authorized and funded. Consequently, I was fairly well known to a lot of those people.

I had a wonderful time that day. As an honorary chief of the Ponca Indians from my Tulsa days, I was soon to become another chief—a bigger and different tribe, for sure. After a barbecue and other events that go with that kind of festivity, I went to Tulsa and stayed with some friends, and the celebration continued over the weekend. So it was a nice way to have it happen, especially since our son John, then First Lieutenant John W. Morris, III, was with me.

I don't know what else to say about getting the job. The great men and women of the Corps are loyal to their Chief and seemed to accept the news okay, but as Chief number 44, I knew that in the final analysis I had to earn their support by performance, not selection. The transition into the job was very easy. As deputy, I was sitting next to General Gribble and had worked with him closely ever since he'd become Chief three years earlier. One sidelight, shortly after my selection I was asked to move from Fort McNair into General Gribble's quarters at Fort Myer. My countersuggestion to redesignate my quarters at Fort McNair as the Chief's quarters was approved. General Clarke had lived at Fort McNair when he was Chief.

To become Chief of Engineers you go through a series of interviews. In my case I'd been interviewed by the Secretary of the Army [Martin] Hoffman, then by Secretary of Defense [Donald] Rumsfeld. Finally, I was called over to the Senate for confirmation hearings. Senator Stennis had me appear before the full Armed Services Committee for hearings on my becoming Chief of Engineers. I don't think that's happened with many other Chiefs, at least not anyone in my recent memory. That was quite a nice event. They were very kind to me.

On 1 July, General Weyand promoted me to lieutenant general, and Secretary Hoffman presented me with the appointment from the president to be Chief of Engineers. Gerry, the children, family, and friends were present for this very nice ceremony.

I think the most memorable event in conjunction with the change-over occurred when General Gribble gave me the "MacArthur Castles." As background, General [Leif] Sverdrup had been MacArthur's engineer in the Pacific during World War II. He was given this set of



Major General John W. Morris and his son, First Lieutenant John Morris, in Ponca City, Oklahoma, on the day in late May, 1976, when General Morris learned that he had been nominated to be the next Chief of Engineers.

castles by General MacArthur with the instructions that they should be given to some worthy engineer and not put in a museum someplace. So they were given to General Gribble while he was Chief. The leadership of the command changed when General Gribble pinned the MacArthur Castles on me. That transfer started a tradition—permanently, I hope.

I pretty much knew what I wanted to do as Chief of Engineers. I'd been in OCE by this time for four years and knew the staff and OCE operations. In addition, many years in the field in several districts and divisions meant that I didn't have to spend a lot of time learning how the Corps worked or what I needed to do. So I was able, within two weeks, to announce four goals that I wanted to achieve during my term. They were all interrelated.

Stay in Business. That meant getting the Corps in gear with the environmental program while remaining active in the traditional engineering field. I did not want the Corps to be pushed aside because of our historical achievements. This goal became much more significant later when President Carter was elected.

Support the Total Army. Total Army, meaning Active, National Guard, and the Reserves. That was important because the Army's program emphasized these elements. Furthermore, the Army didn't always understand the public works program and felt it diverted some of the engineer support that the Army needed. The best way

to resolve this issue was to do a very good job for the Army. There is a basic difference between the civil and the military work. The Chief must remember, and I think, promote rather than ignore or suppress the difference. "Vive la différence." We had much work to do within the Army, as will come up later.

Support the Nation, our other customers. That led us into the international program and an improved position with the Air Force and other elements of the Executive Branch.

Get OCE out of the Operations Business. I thought OCE had to take care of policy and the world outside the Corps. The divisions and the districts could handle operation with good staff work and the support of OCE.

You may remember there was an exodus of people out to the Humphreys Engineer Center—to the Kingman and later the Casey buildings. We set up the Water Resources Support Center and the Facilities Engineering Support Activity. The headquarters became more active in policy and the coordination activities which the districts couldn't do. That would turn out to be a much more significant goal in 1980 than I had ever thought.

Those were the four things that were to require most of my time. If we did all those, that would be enough. As time passed, those goals affected many day-to-day decisions.

Those were published the 15th of July, and every field activity put together measurable objectives to support the four goals. I implemented the four goals early because I wanted to give the Corps direction. Fortunately, a couple proved to be crucial to our future when the



Major General Charles I. McGinnis, Division Engineer, Southwestern Division (left) and Major General John W. Morris, Deputy Chief of Engineers (center), participated enthusiastically in the dedication parade in Ponca City, Oklahoma, for Kaw Dam, 1976.

Democratic Administration and its philosophy towards the Corps settled into place in early 1977.

An early requirement was to select a deputy. That crucial decision proved to be more of a challenge than I had anticipated. There were many outstanding choices, but I needed to find a man with strengths in areas where I had weaknesses or limited experience.

I listed the areas where I did not feel I needed deputy strength and the areas where I thought I needed an experienced second-in-command. I then reviewed each major general of the Corps without concern about seniority. After analyzing each person's strengths against the weaknesses in my experiences, I chose Bob Marshall, Major General Robert C. Marshall.

Bob had been senior to me until that moment I became Chief of Engineers and a year ahead of me at the Military Academy. Bob had an outstanding background in military duties, in special weapons, in the space program at that time. He knew the Army staff very well. He had a good solid background in civil works, which I didn't need, but in the Mobile District he had a large military construction program which I considered valuable. I asked Bob if he'd take the job, and he said he would take it if after one year he could become president of the Mississippi River Commission and division engineer of the Lower Mississippi Valley Division. On that basis, I accepted him. I know I picked the right man. Perhaps I should not have agreed to the one year, because that led to his leaving at a time when I wished I could have kept him. We made a good team, I think.

I also had to select an executive. Colonel Lamp agreed to stay, but he didn't want to stay too long. Russ Lamp was rock solid. He was an aggressive and extremely capable person. I ultimately selected Roger Peterson to take Russ's job. My secretary in Civil Works had been Jeanine Huffman, and I considered her briefly for the Chief's secretary position. I elected to keep Helen Velsmid, General Gribble's secretary.

Q: Did you have a civilian assistant to the chief of staff at that point?

A: Yes, Jack Quinn. Actually, Russ Lamp selected him. Jack had a lot of growing up to do in that job, which he did. Now I suppose Jack is looked upon as an old head that knows everything about everything, but he had to start off just like everybody else. I can honestly tell you that—he'll tell you—the first year or so wasn't easy for him. I didn't lack for ideas of things I wanted to do, and many, particularly internal stuff, drifted down to him to execute. So Jack had his hands full.

Q: What about the major directorates?

A: Civil Works was headed up at that time by Ernie Graves. Bates Burnell was the director of Military Construction. Walt Bachus was the director of Facilities Engineering. Major General George Rebh was still there in the Postal Program—not a directorate.

Manning Seltzer headed Legal and Woody Berge was in Real Estate. Woody and I had known each other since I was in Tulsa. I'd known Manning since then also. I had to replace them all, though, during my term. Who else? What else did I miss? Personnel was Bob Jacobs, but he was getting ready to leave. I think Ralph Loschialpo was either in the saddle or getting pretty close.

Public Affairs was Bob Benning and then Sam Kem.

Q: Had the Resources Management Directorate been established?

A: I established that.

Q: You established that. So there was still the old comptroller's office. We do need to talk about that.

A: Comptroller was Ted Geesay. Later I changed it to the Resources Management Office. Bill Taylor was running Research and Development. All these people I've mentioned, every one of them would depart shortly after I became Chief. So I had almost a clean sweep of decisions to make on personnel. Maybe they all decided once I got in, that it was time to leave.

Once into the job, an early requirement was to communicate with the district/division engineers face-to-face. We met regionally.

At the end of 45 days I was able to put on paper the issues which I thought were causing difficulty in implementing the goals. So by the 1st of September, things had settled down quite well. We'd tried very hard to make the change quickly and get on with our work because we had so much to do, and besides, the presidential elections were coming in November.

The Chief of Staff of the Army passed from General Weyand to General Bernard Rogers, my classmate from the Military Academy. We had known each other over the years.

As the election campaign warmed up, candidate Carter made some strong statements about the Corps, and I began to realize that we were going to have trouble if Carter was elected. So we began to prepare for that possibility.

Unlike earlier reorganization plans for the Executive Branch, this one would be a little different, because the president personally had made a statement that he was going to do something adverse to the welfare of the Corps. Under earlier reorganization schemes, the director of Civil Works usually became the action officer and, as mentioned earlier, he was the one that put his career on the line in case something went wrong. The idea was to insulate the Chief.

In this particular case, there would be no alternative but for the Chief of Engineers personally to become involved in developing a plan to stay in business.

Well, as you know, Jimmy Carter was elected. I had probably, along with a lot of other people, misinterpreted the public's will, intent, and it was only in the last days of the campaign that we began to realize President Carter would probably make it, or had a good chance of making it. So we began to plan how to react should he implement his campaign promises to put the Corps of Engineers out of business. That occupied a lot of my thinking in the early days.

Shortly after the election, the Chief of Staff of the Army had his annual commanders conference. The commanders sat with the Chief of Staff at the table. The staff along the back normally didn't say anything unless they were asked to or a subject came up which was their principal area of interest and responsibility. I was prepared to make a comment if I could get an opening, but none came so I took the initiative and asked if I could present an issue I considered important to the Army. General Rogers said, "Yes, go ahead."

I then mentioned to the Army staff that I had a real problem because the new president of the United States had said he was going to put the Corps of Engineers out of business—out of the public works business. I stressed that such was not in the best interests of the Army or the country, but the president was our commander. My plan was to convince him, by good works, that his plan was not the best thing to do. I stressed that I could use the Army

commander's support, but I certainly didn't need any distractions. I indicated my hope that the Army staff would support us in our initiatives to keep this mission with the Army for the good of the Army. Otherwise, I'd appreciate it very much if they would refrain from making adverse comments and just let me fight my own battles in my own way.

I was extremely pleased and relieved when every senior general in the Army supported the Corps' keeping the civil works mission. I had some concern that the Army leaders and the staff would not understand the value of the civil mission to the Army. I soon realized the senior people in the Army did understand. General [Robert] Shoemaker, Forces Command; Kroesen, Vice Chief of Staff; and General [John] Vessey, CG VIII Army, had seen the Corps at work and knew the Corps' efforts in the public arena and how well we had handled ourselves with the leaders of communities. Their response and that of all commanders was most supportive and valuable. No doubt there are problems at the colonel, lieutenant colonel, or maybe the brigadier general level, but not to the senior people who've seen the Corps at work nationally.

After the meeting, I was walking down the hall with General Rogers to thank him for letting me have a chance to make the pitch. Also, I wanted to review the Army's position. In the course of that discussion, he indicated he felt the Corps should be a major command and asked my thoughts. I agreed and was asked to put together a recommendation.

By this time, we had established the Resource Management Office as a general officer position. I wanted a general in there, so I'd brought in somebody I thought would be a general, and that was Morelli, Don Morelli. Don was an excellent commander and overall an outstanding Corps of Engineers officer. He'd been a district engineer and a regimental commander at Fort Leonard Wood. He was a go-getter, highly regarded, had a lovely wife and beautiful family. Morelli was given the job of putting together the paperwork necessary to get the Army's approval to make the Corps of Engineers a major command.

Ultimately, I had to go see General Kroesen, Vice Chief of Staff. This process took quite a few months. General Fritz Kroesen asked me, "Do you really want to do this?" I said, "Yes." He asked, "Why?" I said, "Well, I've given it a lot of thought and I think there's more pluses than there are minuses." I said, "It may be a little awkward at first because the Army's got to accept this, but in the long run it recognizes the fact that the Chief of Engineers is a commander and gives him a clearer voice within the Army where he needs it." He approved.

Then we had to develop command insignia. Also, we needed a crest. We had a contest for the crest, and after a lot of disappointments, a handicapped employee from the Kansas City District came in with a proposal. It was beautiful, and we adopted it.

We had a lot more trouble getting the patch worked out, though. I gave General Bachus the job. He developed a family of patches. Ernie Graves had moved up to be deputy, so this was during late summer 1977, and I gave them to Ernie to look over. I didn't especially like any one of them, but I didn't want to disapprove them out of hand, so I asked Ernie if he'd take a look at them. About ten minutes later he came back in with a design he had drawn up and which we adopted. That was quick.

There was one thing, however, about the patch. It looks a lot like the 20th Brigade patch. As you recall, I'd commanded the 18th Engineers, and for a moment my reaction was to make it look less like the 20th Brigade patch. I decided I shouldn't get personal about this thing so I left it alone. I did, however, mention to Ernie that he obviously had been in the 20th Engineer Brigade.



General and Mrs. Morris cut the cake at the Corps of Engineers' 205th anniversary at Ft. Belvoir, Virginia, in June 1980. The new unit crest for the U.S. Army Corps of Engineers as a major Army command is in the background.

Q. Dealing with a new president who had criticized the Corps was a major challenge, wasn't it?

A: We were really greatly worried because, as with most presidents, it's difficult for a new administration to fill all key positions. We didn't know who was going to be Secretary of the Army for quite a while. Near the inauguration time, President Carter selected Clifford Alexander, a Washington attorney, to be the Secretary of the Army. The Assistant Secretary of the Army for Civil Works became Mr. Blumenfeld, who with Secretary Alexander proved to be a good team for the engineer community.

I continued General Gribble's practice of having the Chief deal with the Secretary and the director of Civil Works deal with the Assistant Secretary of the Army for Civil Works. Mr. Alexander actually knew very little about the Corps at the outset. He was a lawyer and had his own agenda. He was very strong on suppressing discrimination, fostering equal rights, and promoting equal opportunity.

An opportunity to deal directly with the president on major Corps issues arose quickly. I had been in New York around the 16th or 17th of February. On returning to D.C. I had a phone call awaiting at the airport. My secretary advised me I was to be in the president's office at



LTG John W. Morris, Chief of Engineers; Clifford Alexander, Secretary of the Army; MG Ernest Graves, Director of Civil Works; and President Jimmy Carter at a meeting in February 1977 to discuss the President's "hit list" of water resource projects.

1600. This was about 1430. I said I would go home and put on a new uniform and asked if the Secretary of the Army was involved. She said she didn't know. I asked her to check with the secretary's office and then to call me at home if he wanted to give me any instructions. So I went home and was changing clothes when the phone rang. The secretary said he knew about the meeting and would like me to pick him up at 1530. We went together. On the way over, he asked if I knew what it was all about. I said I wasn't sure, but guessed it had something to do with the "hit list" that we'd been hearing and reading about in the paper. So we discussed the secretary's options and his best position.

I told him that we had been trying since I was in Civil Works to get the Congress to direct the Corps to review every one of its projects to see if they met the environmental criteria. The idea was that we would like to get the constant hassle about previous decisions behind us so we could dedicate our efforts to future work. I felt the hit list approval would work only if the president asked the Congress to approve the approach.

Secretary Alexander again discussed what he should tell the president if he was asked to comment. I recommended he tell the president that if he wants to stop projects or if he wishes to set new criteria, that he do it in conjunction with the appropriations cycle, which would start a couple of months henceforth and continue for a couple of months. In this manner the subject would be aired in the Congress, and everybody would know what the president was doing. Of course, this would delay the process several months, but he would then have a clear shot.

Well, when we got to the president's conference room, the table was full of people. On the right of the president was Secretary [Cecil] Andrus, the Secretary of the Interior, and next to him was Secretary Alexander, and then so forth and so on. I was sitting directly across from the president. General Graves, director of Civil Works, was with me that day.

The comments went around the table. First, the president asked Secretary Andrus what he thought about his plan to stop some projects. Andrus suggested sending up one and see what happened. He came to Secretary Alexander, who said, "Well, we should do this but in conjunction with the appropriations cycle, so everybody knows what's going on and there's no surprises to the Congress."

To Secretary Andrus the president indicated that it was not his intent to just send up a trial balloon, and to Alexander he indicated, it meets the objectives but takes too long. He didn't want to wait but wanted to do this now and make an impact.

I was the last one and when asked if I had any comments I noted, "It sounds to me like there is a list of projects." Besides the newspaper accounts, I'd never seen such a list. So President Carter said there was and for me to see it. Mr. Bert Lance went out and brought in a list, gave it to me, and I looked it over. There were 19 projects, as I recall, 11 of which were Interior and 8 or 9 were ours. I reviewed the projects on the list. As it turned out, the Corps had planned to recommend minimum or no funding for all except two projects. The two projects were the Tennessee-Tombigbee Waterway and the Red River Waterway.

I suggested he drop the two navigation projects because his criteria didn't apply. His criteria were to retain only those projects that had immediate benefits and also meet all the environmental criteria. I stated that the navigation projects may meet the environmental criteria but they rarely give immediate benefits. Navigation tonnages have to build up over a long period of time, unlike flood control, where you can get benefits at once.

The president agreed and indicated we probably should review his list.

Then I noted that one project in California provided electric power and they were having an energy crisis. This could create a political problem because of its need. He said, "Thank you very much," and then announced that, "Anybody who wants to challenge any of these projects or add to it may do so, but I want this list ready to go and to include a requirement to review all other unlisted public works projects not completed." President Carter departed.

So the next thing I knew, somebody was leaning over my shoulder. It turned out to be Mr. Burt Lance. "General," he said, "you made a very good impression on the president with your presentation. You seem to know what you're talking about and he needed that kind of help." So I said, "Well, thank you very much." I wasn't feeling too well that day. I thought I was getting the flu. Well, it turned out I was. Friday I worked half a day and for the only time since 1960 I went home and went to bed.

Saturday morning I stayed in bed and decided to write a letter to the president about the meeting on Thursday. Ms. Velsmid came to my home, and I dictated a letter to the president. The letter basically stated that what he was going to do was necessary and very courageous, but it was going to lead to a lot of problems for him politically because of the sensitivity of those programs to the Congress. I was most supportive of his directive that all projects be reviewed. I said also in the letter that the review, when complete, would have a very positive impact because the Corps of Engineers could then divert its great talent of solving tomorrow's problems instead of just fighting yesterday's decisions. That was the thrust of the letter. I closed with the thought that I wished I had time to sit down and talk to him

because there were so many things that the Corps could do for the future of this country. I mentioned a few in passing. I wished him good luck with his program.

When I got to the office Monday morning, the letter was all prepared. I gave it to Bob Marshall to read and asked for his comments. Bob said, "It's a great letter, Chief, but I wouldn't send it." I asked why not. He said, "Well, you'll probably lose your job." It was a tough situation, but the future of the Corps was at stake, and I felt that made the letter worth the risk. I asked Ms. Velsmid to take the letter to the White House immediately before I changed my mind. I signed it. I did not tell Secretary Alexander or the Chief of Staff. I knew I could not clear the review process quickly and the iron was hot.

We got a call from Jack Watson of the White House staff saying the president would like me to come over and talk to him. I was surprised and also happy. I prepared several talking papers on the Corps' role in recreation, in environment, in water supply, et cetera. I also made a list of things that the Corps could do: the strategic petroleum reserve, mass transportation, improve recreation, the quality of life, conservation, things that—I don't remember the details because it's been so long ago now; but at any rate, I went over to see the president well prepared to convince him of the value of the Corps to him and the country. Mr. Watson was present and noted to me that we had about 15 minutes. Well, it took us an hour and a half. Along the way, we got on to the Sprewell's Bluff project, which I knew was the knotty issue underlying his concept and problem with the Corps.

When I was director of Civil Works, Sprewell's Bluff was authorized for a new construction start and carried \$10 million in the budget. The U.S. congressman from that area was Jack Flynt.

While governor, Carter had come out strongly in opposition to the project. As was the practice, the Corps did not start new projects if the governor opposed them. If it was under construction we'd continue, but we would not start. So as director of Civil Works I personally called OMB and asked Don Crable [or Tom Berry] to put that money on another project or distribute it elsewhere.

Then Congressman Flynt wanted a resolution prepared which, if passed by the legislature of Georgia, would override the governor's position. So he asked me if the Corps would draft it for him. I said, "No," because it was not a federal activity and I didn't want to become involved. He then asked if I would review a draft if he prepared it. I said, "I'll read it but only for one purpose—to see if it conflicts with any federal regulations." So he drafted it and sent it over. I read it and responded that if it passed, the Corps could perform its role.

So then Flynt sent that down to Georgia. They introduced it in the Georgia legislature, and the majority of the people voting supported overriding Governor Carter, but because of absentees the number who voted did not represent the required majority of the total membership. So the motion failed to carry.

Governor Carter had gotten the idea that the Corps was the bad guy in this, that we had put in the \$10 million, that we had written the legislation, and that we were lobbying against him.

So during our meeting I explained all this to him. He indicated he thought I had written the legislation. I said, "No, Sir, I refused to write it." I said, "I'm also the fellow that took the money out of the budget because as soon as I heard you were against it, I didn't want to push this new start against your wishes as an executive. That's our policy and we used it."



*LTG John W. Morris and President Jimmy Carter
after a meeting in early March 1977 to discuss Corps' projects and the future.*

We then discussed my ideas of things the Corps might do to support the nation's needs. The meeting ended on a good note. I walked out with Jack Watson, who sat through this whole thing and indicated he thought that was a very interesting meeting. He felt the president must have been interested because he scheduled only 15 minutes and used over an hour.

I subsequently had some confirmation that that was a very good meeting. I also caught hell from the Secretary of the Army. When he found out I'd been over there, I received a call from him with emphatic words to the effect that, "You don't go see the president of the United States without my knowing about it, General." So I said, "Yes, Sir, I'll never do it again."

Well, the sum and substance of it was that the president suggested to his cabinet that they use the Corps of Engineers.

The seeds of success which led to the Corps' not being organized out of business were planted, I believe, during that face-to-face, one-on-one conversation, particularly when we got Sprewell's Bluff clarified. While the Secretary of the Army was upset, and had every right to be, the event happened so early in his tenure that we were able to soften that issue as we accomplished a lot of things together later.

An afterthought—when the president had his open house in January immediately after the inauguration, Vice President [Walter] Mondale said to President Carter, "General Morris and

Mrs. Morris,” and I added “Congratulations, Mr. President, I’m the Chief of the Army Corps of Engineers.” He said, “I know who you are.” I never will forget that, “I know who you are.” All these other things I’ve mentioned follow that.

So that was an early highlight, very important to our first goal of staying in business.

The next event involving President Carter personally occurred in the fall of 1977 when the Tocoa Dam failed in Georgia. You may recall that Senator Stennis, years before, had sponsored successfully the dam safety inspection program [\$100 million]. It’d never been implemented. So when the dam failed down in Georgia, there was another meeting in the president’s conference room on the subject of inspecting the dams and implementing this legislation.

The Secretary of the Interior and the Secretary of Agriculture very much wanted that program and made strong proposals. The program was in the Corps’ bill and budget, so we had a leg up on it. General [Charles I.] McGinnis, then director of Civil Works, was with me this time. The president asked if the Corps could undertake the dam safety inspection process. I indicated we were ready. He then asked when we could start. As I remember, that meeting was conducted about the middle of November. I said, “We’re looking to start around the 1st of April, beginning of the second quarter of the next calendar year. All of our people are busy, and we must issue contracts or we have to take people off of other things.” That’s when he said, “Well, I wish we could start a little quicker.” I responded that we would start the 1st of December.

Back in the office I asked General McGinnis to inspect one dam in each state during the month of December. Why? I didn’t want any governors calling us up and saying, “You did somebody else’s dams, you didn’t do ours.” Besides, we couldn’t do more than 50 in the first month anyhow. That’s what we did and it worked nicely. There were no political ramifications and we did get the program going. Turned out we had a lot bigger job than we thought we would. There were liability issues but we worked through those, and as far as I could tell, the president was satisfied with the program.

The Corps as an institution gathered a lot of international attention from the dam safety program. The chairman of the International Committee on Large Dams [ICOLD] asked me to write the protocol for a permanent ICOLD committee on dam safety. I formed an ad hoc committee of international engineers and went to work. After two years we finished the job. By then I was retired. I hoped and expected to become the chairman of the international committee on dam safety once it was made permanent; however, the chairman said, “You’re retired now and don’t have anything to do with dams any more, so we’re going to find somebody else to be president.” I was surprised and disappointed.

I was invited to the White House to dinner one evening in honor of the president of Nigeria, who was visiting the United States. President Obasanju was an engineer, and he wanted to make the Niger River navigable up to where a new capital would be built. The United States had been asked to help in the navigation project, so I was invited to the White House for dinner and we spent some time discussing the matter. The project did not materialize.

My last event with President Carter occurred when I was about to retire. I asked my secretary to call the president’s appointment secretary and schedule a farewell visit. The lady said she’d take it down but she didn’t think there was any chance. Word came back that President Carter would like to see me before I left the service and we set the visit for the 17th of September. This time I told the Secretary of the Army I was going.



A White House meeting presided over by President Carter to discuss dam safety on 28 November 1977.

We had in the works, at that time, two unique items of interest to the OMB. One was a new airplane for the Corps. The old twin prop G-1 was the oldest of its type flying. We wanted to replace that with a jet, a G-2. The Congress had okayed it but OMB wouldn't release the money.

The other item concerned a new athletic facility at West Point for basketball and ice hockey. Congress had approved a \$5 million supplemental military construction appropriation to meet a cost overrun. OMB claimed President Carter didn't want to release that money because there was too much need in the Army for bullets and rifles and he couldn't, just on the eve of the election, spend \$5 million or more to build a basketball court.

When the word got out about the 17 September visit, the guys in OMB began to wonder what I was going to talk about. They called up and asked, so I indicated, "I just want to go over and say goodbye." The OMB representative then asked if I was going to talk about that airplane. I said, "Oh, I'm glad you reminded me, but I don't know whether I'll talk about it or not." So we started a little game.

For some reason or another I had to go see Mr. McIntyre, Jim McIntyre, the director of the OMB, prior to September 17. While there the basketball court came up and he said, "Well,

we know all about that, and it just doesn't seem like a good move this close to the election, but as soon as the election's over we'll release the money."

On the way out of the office I asked Jim about that airplane. He asked, "What airplane?" So I knew he had not heard about the famous Corps of Engineers' request for a new airplane. Then I explained that his people at the new executive office building were not releasing the money Congress had appropriated so the Corps could replace the old airplane that was about to fall apart. So he again indicated he didn't know anything about the airplane. That was the end of that conversation.

The 17th of September was the day after all that trouble in the desert of Iran when U.S. Forces were trying to release the hostages. My appointment was canceled; however, on the day I retired, Mr. McIntyre called and said, "Go buy your airplane, Jack." So that whole scenario about going to see the president created some pluses, even though the visit was canceled.

Well, I've gone all the way from the first day until the last day and haven't even talked about what we started to talk about. I tried to stay on track with my relationship with the White House, a single subject.

Q: Yes, that's good.

A: I saw quite a bit of President Carter. The Chief of Engineers isn't all that important in the scheme of things around Washington, but we did have some issues that were important to President Carter, and I found that the best thing was to get one's act together and try to arrange to talk about them. It worked out in my case.

I have tried to keep the White House events together as a single subject. The real importance of the visits and discussions with the president and his principal staff was to keep the Corps of Engineers in business. There was no plan or single decision to do that, but the overall impact was positive. When the reorganization of the executive office was finally released, the Corps of Engineers was not mentioned one way or the other. So whether we dodged the bullet or not, I don't know. I'm not even sure one was fired, but we thought the president was taking aim, anyhow.

Q: What about your relationship with Congress?

A: Now, it might be a good idea to talk a little bit about the relationships with the Congress. The Chief of Engineers was fairly free to deal, within the proper limits, with the Congress. I had a comfortable and knowledgeable association with the committees of Congress and particularly the staffs of those committees. That turned out to be important and valuable, particularly when we got into things like the Tennessee-Tombigbee, the privatization of dredging program, Lock and Dam 26, environment and many, many other subjects with political implications. The Secretary of the Army naturally was concerned because he did not want the Chief or anybody in the Corps lobbying. The fact is we didn't lobby, but there was a perception. In my case particularly, since I had been so closely involved with the members and committee as district engineer in Tulsa, division engineer of MRD, and director of Civil Works.

My objective was to keep Congress informed, and that paid off because later on there were special hearings on whether or not the Corps had been up front with the Congress on various things, particularly Tennessee-Tombigbee. So having and keeping a good relationship with the Congress was almost as valuable as the relationships we had established with the White House. I say "almost" simply because the president as the chief executive could, by executive order, make changes internally which the Congress, of course, could not do summarily.

The idea of getting OCE out of the operations business helped us in OCE devote needed time and our capabilities to dealing with those externalities which were so important to us.

Q: Turning to the Corps of Engineers itself, how did you feel about the internal organization of the agency?

A: The organization of the Corps of Engineers was a delicate issue to the Congress. We should talk about that a little bit because the organization of the Corps of Engineers has been a continuing subject for many years. Joe Tofani and I worked out a plan in 1974 to manage the continental United States with five or six divisions.

We also knew there were districts we didn't need. So the first suggested change in the organization involved the districts. We got slapped around so badly politically we re-evaluated whether or not that was a good idea. We rationalized and concluded that the district distribution was not exactly the way we would want it, but we needed a certain number of districts in any case. The number we had wasn't too bad. While we might make it a little more logical to change them around, we probably wouldn't improve the operation a great deal especially when compared to the pain and cost of moving them. That was our logic train and it's probably true because there's so much political interest in these districts by the local people and by the Congress.

As far as the organization of the offices was concerned, I had always felt that the structure within the division organization was excellent. Not so at the Corps headquarters. The districts were similar to a division with normally a deputy for military, a deputy for civil, with all the other functions in support of the two programs. You didn't have a separate engineering division for military and a separate engineering division for civil.

Since the districts and divisions were organized one way and because OCE was structured differently, communication presented some problems.

My thoughts began in the 1960s, long before I became Chief. Once in OCE, I noted that the civil works organization was a cradle-to-grave kind of thing; whereas, the military program was fragmented between program development, facilities engineering, and military construction. So the idea evolved to combine the related military functions into a directorate similar to the directorate for civil programs. They would be structured the same internally.

Then, with that in place the directors would become program managers. Support activities would be combined into a directorate with a civilian in charge. That was the idea, but there was much work to do before we could get to that point.

First off, we designed the Army Real Property Management Program, which spanned real property from concept, acquisition, planning, authorization, construction, operation, and disposal to be one program. It became part of the Army program management plan and was published. It was then lectured at the Army War College and carried to all the major commands. There was a general consensus at TRADOC and FORSCOM in support. All real property funding was combined except for the operation and maintenance money, which was allocated to the post commander, who didn't want that money going someplace else. I can understand that.

The ACE's shop required definition to break out the Assistant Chief of Engineers' function. For policy and staff work we agreed that the ACE would work for the Chief, but for the military programs part, he'd report to the director of Military Programs. Major General Bill Wray had been the Assistant Chief of Engineers and became the first director of Military

Programs. So finally the civil works and military programs organizations were conceptually the same.

The last step then was to establish the Directorate of Engineering and Construction and, to some extent, operations to support the two program managers. That was yet to be done when I retired. There was in place a director of Military Programs, and a director of Civil Works with two major generals as program managers. I had expected Lloyd Duschka would head the third directorate. I don't know what happened after I retired. General [Joseph] Bratton never created the third directorate, but he changed the director of Military Programs to the director of Engineering and Construction with a major general in charge. Without saying it was good or bad, this arrangement was a diversion from the plan I had envisioned and the direction we were heading.

One of the by-products of the changes was that the ACE's shop became very big instead of being very small. I felt the ACE's shop should be kept very lean. I think in the long run the expansion led to the ACE's shop being dismantled as has now happened, but I don't know enough about it to be constructive.

So the organizational plan that I had in mind which worked very well under Bill Wray during the Israeli airfield job got off track. I do not want to make this record sound critical because I have no criticism of it. It's just that it was different from what I had thought we should have done.

To change the organization of the Corps of Engineers is a continuing major issue. Now, 16 years later, General Williams is still having agonies over this. Of course in the meantime, a couple of the Chiefs decided to get rid of some districts with the same bloody experience that I had. The current plan has not deleted any districts. They've changed the shape of them, but they haven't changed the number of them. To reorganize is a major, major undertaking, which creates a lot of turbulence and has adverse morale effects.

I really hope that all these other studies have led to improvements in each iteration to where we now have a plan that's suited to the times. I don't know if it is or not, but I hope that's what happens.

Now, inherent in the organization plan that I've discussed so far was this idea of getting OCE out of the operations business, and I've already mentioned what that did to the Humphreys Engineer Center. It also caused us to consolidate the Facilities Engineering Directorate into the Military Programs Directorate. So we actually saved a general's space, which we needed elsewhere.

We also began to realize that in some areas of the country the Corps was not going to be building any more major projects, so keeping the same structure at all the districts was becoming inappropriate. The question was, "How were we going to handle this change without closing down districts?"

We came to the obvious conclusion that we would tailor the districts to meet the requirements. The idea was that if a district didn't have any construction programs, it didn't need a construction division and possibly didn't need an engineering division. It needed a good operations division to run what they'd built and a planning division to take care of the studies they were doing and probably a little engineering and construction to help with these operational problems. Basically, we tailored the district to the need. That allowed us to put some lieutenant colonels in as district engineers. That gave us some command positions below the colonel level and it gave us a better training base to move up into district and division spots later.

In the process, Charleston was a district that we tailored. A couple of civilian employees started the rumor that we were going to close the district. Senator [Ernest] Hollings became upset and threatened to do something about the Army's budget for the M-1 tank. He began putting a lot of heat on the Chief of Staff.

I had General McGinnis [director of Civil Works] go over and talk to Senator Hollings. McGinnis came back after a rough session and said, "Don't you ever do that to me again." Senator Hollings remains a strong supporter of the Corps, but he's also very jealous about the Charleston District.

In the tailored district concept, we resolved quite a few issues. The nice thing about it was we didn't have to publicize it too much. The main thing noticed publicly was the fact we put lieutenant colonels in the districts instead of colonels. Occasionally we had to justify the change, but the rank didn't make that much difference apparently. We were able then to resize the districts down gradually, through attrition or other basis, and not cause a great deal of public reaction.

Of course, once you say you're going to tailor a district and you select out a few to be tailored and leave the others alone, you risk reaction; but if you do it as part of a logical and evolving business plan, it seems to work.

Before concluding our discussion of organization, I want to include a few points about the Huntsville Division. The Huntsville Division is an important element in the Corps' structure, although I admit to setting up a study group with the charge to determine its possible dissolution. This step taken early in my tenure as Chief proved convincingly that a separate division to address special and unique problems made more sense than the alternative approach to such issues. Huntsville's good work on the missile programs, management, training, postal program, special procurements, and other activities has substantiated the value of the division and completely reversed my initial thoughts.

Q: The headquarters moved to a different building while you were Chief, didn't it?

A: The move—yes.

One of President Carter's initiatives was to establish the Department of Energy. He selected Dr. James Schlesinger to be the first Secretary of Energy. Schlesinger had been Secretary of Defense. In that position he knew about the Forrestal Building. He apparently told President Carter he wanted the Forrestal Building for the Department of Energy. In any case, President Carter gave it to him. So then we had to figure out what to do next, and my hope was we could get a new building. We already acquired the land, some 600 acres at the Humphreys Engineer Center, and we had a master plan for developing that complex. It was moving along right about on schedule. We had planned three buildings there plus a museum.

I really wanted a new headquarters at the Humphreys Center, but at that time the Department of Defense was promoting a group of buildings, one of which was Buzzard's Point. I went over and looked at that and it wasn't big enough. I advised the Secretary of Defense's office that we would take that building at Buzzard's Point but I needed 50,000 square feet. There were only 25,000 available. The fact that I showed some interest in it at least was a plus and maybe put us in good standing when we asked for something else.

We looked at a lot of places and the only one of those that seemed to suit us was 20 Massachusetts Avenue. One of the minuses was its proximity to the Capitol. We felt the

White House wouldn't like that. That was an unfounded theory, or at least one that never surfaced.

Senator Stennis called up one day and asked me where we'd like to go. He indicated it was not his business but wanted to be sure the Corps was taken care of. I told him that we were looking at the Pulaski Building but I wasn't sure. He said to tell the House people who have the hearings first. Mr. Schlesinger had asked for something like \$17 million to remodel the Forrestal Building. So the day of that hearing I was called by Hunter Spillen, House Appropriations Committee, and asked what we wanted to do. I said we liked the Pulaski Building. That's when he asked me if we had a fall-back position and I said, "Well, yes, but let's not discuss it yet."

So when Schlesinger came over to the House committee to get his money, they indicated okay on his money but he had to give the Corps of Engineers the Pulaski Building. That's how that came about. Secretly, I'd hoped that they wouldn't be able to pull it off and then I was going to ask for the money for a new building.

I don't know if we would have gotten a new building had I put it up front or not. Anyhow, I thought if we asked for the Pulaski Building and didn't get it, then our case for a new building would be very strong. My belief at the time, I'm pretty sure, was that we had to at least be honest about the buildings that we could use, and the Pulaski was one of them. So we got it and then moved. That happened during 1979. General Burnell was the deputy by that time and was in charge of the move. I didn't have too much to do with the layout. Bob Blakeley was the true responsible planner.

Burnell picked a little office for himself. I remember looking at the plan. I said, "Bates, I don't think that's going to be satisfactory for the deputy. Why don't you put your office on the other side of the secretary." He said, "No, I want the deputy to be able to walk through a door into the Chief's office. I don't want to have to go across anybody's area to get there." I said, "Well, okay, if that's how you feel." I said, "The rest of it looks pretty good." We moved in June and early July.

Bob Blakeley also handled the physical part of the move and did an outstanding job. Bob was a strong asset to the Corps in so many ways over the years. You may remember he's the one who helped me get the air-conditioned vehicles when I was in Tulsa. Bob and I spent a lot of time together, and I just have the highest regard for him.

So we finally got ourselves into the Pulaski Building. I took my things over on the 4th of July, 1979.

The furniture in that office was brought over from the Forrestal Building. A professional decorator had done the executive suite at the Forrestal Building. When it was brought over to the Pulaski Building, it looked out of place. I kept the desk General Clarke had, a small, fairly modern desk with some chrome on it. That office in the Pulaski Building now has the traditional military furniture in it. It looks better.

Q: Okay, a quick follow-up?

A: Yes.

Q: We were going to come back to the subject, and I should have interrupted you earlier, about the relationship between the ACE and Military Programs and that new reorganization.

A: Yes. You mean the ACE's shop?

Q: Yes, the ACE's shop and Military Programs.

A: That was a tough problem. The Assistant Chief of Engineers basically is there to assist the Chief of Engineers on Army staff matters. If the Corps did not have a civil works program it would still need to have an Assistant Chief of Engineers. He might be called the deputy or something. Historically, an engineer battalion in an Army division had a division engineer, the battalion commander, and an assistant division engineer. The latter officer served at headquarters and responded to the division staff while the battalion commander ran his battalion. The ACE is the same concept and was understood within the Army.

At the Department of the Army level, the Assistant Chief of Engineers' office inherited many operational activities. We were able to list those duties which fell into purely the Assistant Chief of Engineers' business as the representative of the Chief. The rest fell under Military Programs.

Generally speaking, the overall management of the ACE's shop, except for purely staff actions, belonged to the director of Military Programs including items on the borderline.

The program worked well once in place, and if you talk to General Wray he'd probably agree.

Q: You have some additional observations on your selection as Chief.

A: I'd like to go back a little bit and pick up being selected for Chief of Engineers. I mentioned the luck involved in getting the job. In my case, being a little bit late getting through the grade of captain, for reasons I've already discussed, I was junior to two classmates who were exceptionally well qualified and, in my judgment, more likely to be selected.

However, they both left the service before the selection process commenced. One was Bill Glasgow, General William A. Glasgow, who had to retire for health reasons in 1969. He had been executive to General Wilson as Chief of Engineers. The other was Bob Mathe, Brigadier General Robert E. Mathe, who was the last engineer commissioner of the District of Columbia and also, I believe, the first member of the class of June 1943 to make general. Bob was exceptionally well qualified, based on outstanding performance all through his career; however, for personal reasons, he elected to retire in the late 1960s.

So those two better qualified candidates departed the service, cleared the way, and improved my chances for selection. When I was sworn in, both were present, and I did thank and congratulate them for their foresight in leaving the Army.

Another thing that happened that I would emphasize is the impact of all this on my wife and family. Being away in Vietnam for a year was one thing. They knew I was going to be away a year and they built their life accordingly; however, when I came back to Omaha and then to the Chief of Engineers' office, their life depended on my daily schedule more or less, which wasn't always predictable, convenient, or comfortable. In 1970, our son was at the Military Academy and our daughter had already graduated from the University of Connecticut and was teaching. So Gerry's life was considerably different during that period than it had been earlier when our children were at home.

She traveled with me as much as she could within the regulations and took a great interest in the Corps' roles. I think she probably visited more hydroelectric powerhouses and inspected more dams than any woman in the world.

The situation changed materially with the Chief of Engineers' job. Social requirements meant adapting our fairly private home lifestyle to the demands of the position. Such things as entertaining the wives of the Engineer Officers Advanced Course students, New Year's

reception, visiting officials, et cetera. Incidentally, we had moved to Fort McNair in January 1976 while I was still deputy on the assumption that we would be there until 30 June 1977.

The engineer wives affairs turned out quite nicely. Even now Gerry meets women who remember very well their visit to the Chief's house. Then, of course, there were the holiday events and visitors to Washington.

So I shouldn't pass through this period of my career without emphasizing the importance that Gerry played, not only in supporting me as I went along, but the requirements of my various assignments, especially the Chief of Engineers. No doubt the other occupants of her position have had a similar experience.

Q: In talking about becoming the Chief of Engineers, you mentioned the MacArthur Castles. You said at some point later you'd talk about Mrs. [Jean] MacArthur's reaction to the castles?

A: Colonel Joe Markel, retired, was a remarkable and highly regarded New Yorker. He was a lawyer who had served as a legal officer in the Corps of Engineers during World War II. He had a great love for the Corps of Engineers and was very active in the Society of American Military Engineers and in other defense matters.

One evening, he hosted an event in New York to honor Melvin Laird, the Secretary of Defense. A small receiving line included Mrs. Abrams—General Abrams had died by this time—Mrs. MacArthur, Secretary Laird, and me—plus Joe Markel, the host.

During the evening, Mrs. Abrams and I visited quite a bit about their trip to Fort Peck, which I covered earlier. She reiterated to me then that that was most pleasant and the last time that her husband and the family had vacationed together before he died.

Mrs. MacArthur, whom I had not met before, was a most charming and interesting lady. During our discussion, waiting for the event to begin, I removed one of the castles and handed it to her without explanation. She looked at it. "Oh, this belonged to the general," she said. I remember her saying "the general," because she never mentioned any other name.

I then explained to her how I happened to have them, and there followed a very pleasant discussion. Later, I got a note from her mentioning that she enjoyed being at the event and particularly enjoyed hearing about the castles, and she was happy to know they were being put to good use.

Q: But she recognized them right off.

A: Oh yes, immediately.

Q: We've discussed this a little before, but I wonder if it would be appropriate here to talk more about Blumenfeld as assistant secretary and those who followed. Is there any additional material you'd like to add about your relationship with these men, Secretaries Alexander and Blumenfeld? You did mention that Secretary Alexander had some things that he was particularly interested in. Affirmative action, I think, was one of those.

A: Well, we've covered my activities with the president pretty well. As for affirmative action, the secretary was very aggressive as described elsewhere. There were two other elements of the Executive Branch that demanded a lot of time, not just from the Chief of Engineers, but from the director of Civil Works as well. One was the OMB, and the other was the Secretary of the Army's office. I will mention OMB before I get to your question.

Having worked directly with the Office of Management and Budget so frequently when I was the director of Civil Works, I knew the people there. Initially, Bert Lance was President Carter's director of OMB; later, he was replaced by Jim McIntyre.

When the division engineers conferences were held in Washington, I tried to get an outside speaker who would be of interest and of value. On one occasion I invited Mr. Lance. He spoke to the division engineers in the conference room in the Forrestal Building.

It was an excellent event, and we carried on from there. Every time we'd have the division engineers conference in Washington, I would bring in someone from somewhere—including the Secretary of the Army.

To stay with OMB for a moment, there were people at OMB who were constantly looking for ways to save a few bucks on the taxpayers' expense account. I subscribed to that in general, but one of the things they got after was the magazine *Water Spectrum*. Joe Tofani had started *Water Spectrum* and it was a valuable magazine with a good subscription. It was very popular, widely read, and the articles were excellent.

That magazine, in the eyes of the OMB workers, seemed unnecessary. We were able to put them off, at least during my term, although subsequently, it has been stopped, I understand. Too bad. Joe Tofani created *Water Spectrum* and published it out of Civil Works. He wouldn't let the public affairs people have it, to start with because he didn't think they could suit the way he wanted it done. He may have been right.



Chief of Engineers and Mrs. Morris cut a birthday cake on the 204th Corps anniversary in 1979.

That was just one example of the constant pressures that OMB brought to bear on the office of Civil Works, and then, if the issues were important enough, the Chief of Engineers personally would become involved. Military programs activities involving OMB were handled by the Army staff at the Pentagon.

A similar situation was true with the Assistant Secretary for Civil Works, but the Chief's involvement was less frequent in that arena during my term in OCE. The Assistant Secretary for Civil Works, of course, is a political appointee, and he's under certain external pressures that neither the director of Civil Works nor the Chief of Engineers know about.

As covered in some detail in the section on my term as director of Civil Works, Victor Veysey built the office of ASA/CW with the help of Jack Ford. They did a good job in general and were followed by Mike Blumenfeld.

As Chief of Engineers, I didn't deal regularly with the Assistant Secretary for Civil Works; even so, I realized Blumenfeld was much different from Veysey. Veysey, a former congressman from California, was also an engineer who tended to get into the operations of the civil works program.

Blumenfeld, on the other hand, didn't have the same desire to run the Chief of Engineers' civil works affairs. He had a keen awareness of public interests and a very astute political mind. He was almost ideal for the job, in my judgment, because his primary purpose was to deal with the public, the Congress, and the Executive Branch on political matters.

He was followed by William Gianelli, another California engineer with excellent credentials in the water management field. I had retired by the time Gianelli came, so my thoughts about him are derived from infrequent and brief contact and observations. For all his good work, which was substantial and far reaching, he became quite possessive of the Corps' activities. Subsequent assistant secretaries seem to have only increased their inward management of the Corps rather than outward dealing with the political forces. Gianelli was known to deal directly with the district engineers, bypassing OCE and the division offices. I think Bill slowed the decision-making process and brought the Chief more directly into ASA/CW operations than appropriate.

Bob Dawson followed Gianelli. I knew Bob very well and saw a lot of him even though I had retired. He called all the Chiefs in the D.C. area, plus General Graves, and asked us to give him a hand getting the Water Resources Act of 1986 passed. Bob had been an administrative assistant in the Congress and certainly knew his way around the Hill. I thought Bob paid attention to the political winds quite well. He got the 1986 bill through to his great credit. I give Bob good grades. He was very serious, very conscientious about his job, and since he's left the service—the federal service—he's stayed in closer contact with the Corps than any of his predecessors—quite loyal.

My only reservation was that I thought he subordinated, perhaps unknowingly, the position of the Chief of Engineers by taking General Heiberg with him on trips when I think he should have taken the director of Civil Works. The Chief is big enough to stand alone. Besides, the Chief has more things to do than just civil works. I must admit he and General Heiberg made a very strong and effective team. Vald Heiberg was the director of Civil Works when I retired and a great presence for the Corps.

Bob Page was good. Bob was an engineer—an understanding engineer. He instituted some procedures which put the Corps in good stead: the educational arrangement at Huntsville between the University of Alabama and the Corps, an outgrowth of the study of Corps training mentioned earlier; the CPAR [Construction Productivity Advancement Research]

program, exchanging technical information between the laboratories and industries. I had promoted this initiative, but it took somebody like Bob Page to get it done. The third thing, of course, he drew on his construction background to install project management throughout all levels of the Corps' organization—an expensive change which to me had questionable value above the district level. So Bob was the last ASA/CW with whom I had much contact.

I met Mrs. [Nancy] Dorn, his successor, and went to see her about setting up the Army Engineer Association, which I'll cover later.

Ed Dickey assisted Mrs. Dorn and became acting Assistant Secretary for Civil Works on her departure. He's well steeped in the Corps because he was directly a long-time member of the Army Liaison Staff in OCE, which predates ASA/CW Veysey. Ed is presently in OCE as Chief of Planning.

In hindsight, that whole group of ASA/CWs is interesting because they were all so different with different priorities. First, an engineer ex-congressman, followed in turn by a business-type administrator, a water resources manager, an ex-staffer and Washington insider, a successful construction manager, a lady attorney, and finally another ex-congressman. Their diverse talents and varying knowledge of the public works program have impeded the Corps' flexibility and decisiveness. At the same time, they have been helpful politically and in promoting the program publicly. On balance, professional engineers are the most bothersome as ASA/CW, to the Corps' operation and nonengineer, ex-congressmen are most helpful politically.

If General Clarke asked me today for my assessment of the position of ASA/CW, I would have to admit the Corps appears weaker in the eyes of decision makers, and the Congress, particularly. Even so, I'd respond favorably with reservations or hopes for improvement. I'd like an ASA/CW who looks outward, not inward in the "how to perform" department. Also, I'd hope the ASA/CW would be a political activist in resolving matters which, by legislation or by DOD or DA [Department of Defense or Department of the Army] directive, adversely impact the civil works mission (to wit, the acquisition corps/contracting officer matter), and finally I would hope the ASA/CW would be a positive spokesperson for the great work the Corps has done and can do.

One observation is my belief that only a solid, well-disciplined organization such as the Corps could remain so viable and effective after over 20 years of oversight and control by such a diverse and divergent group.

Q: You mentioned a contracting officer problem—could you elaborate a bit?

I was speaking of ASA/CW's help when needed. A current [1996] example is the policy which prohibits district engineers from being contracting officers unless they transfer to the Acquisition Branch. The Assistant Secretary of the Army for Civil Works should get in the middle of that fray and get it unraveled for the national good because the Corps' public works effort is a victim of a procurement program related to weapons, and not to construction.

When the colonels and the lieutenant colonels stop being contracting officers, I'm concerned that the new people handling contracts won't know about the business, causing contract difficulties and costs to increase and work progress to worsen. The district engineer becomes less important. The fact of the matter is it has taken away a major strength of the district engineer position and impacts on the need for military personnel in the program.

There has never been any problem with the district engineer performing as contracting agent. I think in the whole history of the Corps, there's only been one district engineer that failed or mismanaged. The Corps is recognized and renowned worldwide for its manner of handling contracts.

I can tell you, since I've retired, I've heard more complaints about the Corps' contracting attitude than I ever heard before, and I think it's because the people who are managing contracts aren't communicating with the contractor like the district engineers can and would. I hope I am wrong, but it forebodes major problems for the Chief of Engineers when the district engineers are no longer allowed to be contracting officers.

So the assistant secretary must become involved and if necessary get support of the Secretary of the Army. I consider it a crucial issue in both military and civil programs but more so in the latter.

Q: Let me ask you one follow-up question. In recent years, the Corps has also had much more to do with the Assistant Secretary for Installations, Logistics, and Environment. In the 1970s, I think maybe it was just Installation and Logistics. During your term, did you have a lot of contact with the other assistant secretaries?

A: Yes, we did, but we were talking about the Assistant Secretary of the Army for Civil Works. I haven't gotten into the military programs yet. Maybe we should now. I don't want to give the impression civil was more important to me as Chief than military. It definitely was not.

I spent a great portion of my term as deputy, and later as Chief, in consolidating the management of the Army military real property. During that period, because the ASA/I&L [Assistant Secretary of the Army for Installations and Logistics] had given up housing, there wasn't quite as much business with that office.

Now, we did deal with ASA/I&L on the environment until the Assistant Secretary for Civil Works established a position that managed environmental problems for the Army. We continued to work with ASA/I&L on equipment and other post issues, but not as much as today, where ASA/I&L is more involved in post operations.

Of the two, even though there was no lack of interest on my part for the military program, the Assistant Secretary for Civil Works was the more dominant of those two insofar as the Corps business was concerned. That situation could have easily changed; however, we need to recognize there is the entire Army staff directly below ASA/I&L which provided the appropriate avenue for the Chief of Engineers in issues involving the ASA/I&L.

Q: Is now a good time to talk about Secretary Alexander's concerns?

A: Yes, of course, we got off track again on your earlier question, but first I should mention my first secretary—Martin Hoffman. I was amazed at the man's energy and his ability to deal with problems.

Hoffman and General Rogers, Chief of Staff of the Army, made a good team. Secretary Hoffman asked the Chief of Engineers to arrange a trip so he could see what civil works was all about. He went to Lock and Dam 26, which was a very hot potato politically in those days.

When he came back, he was a very helpful secretary because he'd seen the project. We've worked together since I've retired. He remains a very dynamic and personable man. I don't know how he was to work for, but he was very good to work with.

The only confrontation I had with him had to do with a racial issue in Mobile District. Colonel Drake Wilson was the district engineer, and I received a call one day from the secretary's office about a latrine which had "black" and "white" signs on it.

Secretary Hoffman asked me to come over and see him about this report. I asked for a little time to get back to him. It turned out that it was true. It was an abandoned building which had not been in use for some time. Colonel Wilson had it torn down at once.

So I went back to the secretary, and I explained all of this to him, and he indicated we would have to take our lumps on this one. That was that.

In January 1976 he was replaced by Clifford Alexander. Alexander also was an astute politician. He carried the equal rights program every place he went. That was a top item on his list of things to do.

There was a sincere ongoing effort by the Corps to resolve the racial issues, but Secretary Alexander made sure. He came to our division engineers conference in the Land Between the Lakes, Kentucky, raked the Corps very hard, and told those present what he expected in strong terms.

If Alexander intended to make an impact on the Corps leaders he was successful. Having him attend the conference was good because he saw the division engineers and staffs discuss politically sensitive issues, criticize each other, and try to find the right answers. He saw the committees working on current problems and on long-range objectives. So it was good for him to come, but he did give us a strong and critical message, which everyone remembers.

My association with Alexander, though, improved. Improved may not be the right word. It matured, because it started off with each not knowing the other and having to get acquainted, and there were some uncertainties following my meeting with President Carter.

I didn't know his priorities initially. So we had several meetings early on, and shortly after he came in, he again brought up the toilet problem in the Mobile district. The same people who had raised the matter with Secretary Hoffman had apparently brought it to Alexander's attention, not reporting that the thing had been destroyed.

When he brought it up, I mentioned having been down this trail already with his predecessor. I assured him there was nothing there.

He seemed to appreciate the advice I had given him on the way to the White House about the hit lists, and the dam safety inspection program was handled with some political correctness.

In a matter of weeks after that, Lock and Dam 26 surfaced as a critical issue, and Secretary of Transportation Brock Adams wanted to make another study.

Secretary Alexander made an appointment to go see Secretary Adams and asked me if I'd come along. I remember I didn't think we needed another study, and I was sure we could not have other elements of the government making a study of our projects. If there was to be a study made, it should be done by the responsible agency, and that was the Secretary of the Army and the Chief of Engineers. So the Army just had to stand tough on that with Secretary Brock Adams.

So he did. Secretary Alexander handled that very well. I thought it was the end of the deal, but it wasn't. I didn't realize that Alexander had agreed to take 18 months to do a re-evaluation. In the meantime, work would be delayed. I wrote a letter to the secretary explaining that we'd never brought up the subject of safety before, but this project was in bad

shape physically, and we just didn't need to wait another 18 months while a study was being made. To me there was a time beyond which we shouldn't go with the present structure. It may be 18 months, it may be 18 years, but the dam was in bad shape, and we should get it replaced quickly.

I mentioned the word "safety" in that letter, and it upset him because one of the president's personal priorities was to emphasize dam safety to avoid more dam failures.

Secretary Alexander called me over to make this point personally. I admired him for that, in hindsight. We had quite a discussion. My point was simply that I didn't know anything about the 18 months, and that if he felt he had to go with 18 months, I would support it, but that as his engineer I desired a chance to present a position on engineering matters prior to commitment.

I don't want this to sound like it was a knockdown-dragout, but that was the essence of it. He respected my position, and from then on, we never had a problem.

He became the Corps' most ardent supporter when the issue of reorganizing the Executive Branch arose. I can't overstate how supportive he was, and how outspoken he was in defense of the Corps. We couldn't have had a better advocate than Secretary Alexander. From my view he and I had an unusually constructive arrangement. That's not to say that we always agreed, but we always could communicate.

Other persons that we haven't talked about were the Chiefs of Staff, the military bosses. I had two Chiefs of Staff. One was General Bernard W. Rogers and then E. C. Meyer. Understandably, they were both very strong individuals. As mentioned previously Rogers and I were classmates, so I'd known him a long time. He was a principal in the Corps' becoming a major command. He and Mr. Hoffman got along so well—that whole arrangement between the Chief of Staff and the Secretary of the Army, as far as I was concerned, was very comfortable.

The Corps had some problems that involved the Chief of Staff: Charleston District and Senator Hollings for example.

Then we had the blizzard in Buffalo while Dan Ludwig was the Buffalo District engineer. I heard about troops being sent to Buffalo on the TV one morning. At the Chief of Staff's meeting that same morning, I mentioned the fact that when the troops arrived up there, they were going to be working for a Corps of Engineers colonel. It would be nice if he knew who was coming since the Corps of Engineers was in charge of the emergency snow removal and so forth. We were, thereafter, to my recollection.

Secretary Alexander, in reviewing the documentation to support the Corps' becoming a major command, was impressed with the responsibilities of the Chief of Engineers and unbeknownst to me, had decided that he would support making the Chief of Engineers a four-star position. Since Rogers was leaving, Alexander decided he'd wait until General Meyer came in.

Meyer came to see me on the 7th of December 1979 for a briefing. The four-star subject did not come up. Three weeks later, Secretary Alexander apparently indicated he would like to get the Chief of Engineers' position elevated to four stars. Meyer seemed very upset with me about that because I didn't mention it to him in early December.

The truth of the matter is this whole thing about getting the position upgraded was handled with Morelli because they didn't want me to be involved in it. Unfortunately, we got trapped a little bit. General Meyer told the secretary he didn't want to do it. I believe the job has



Chief of Staff of the Army General Bernard Rogers (shaking hands with General Morris) addressed Corps employees at the Engineer Day celebration in June 1979.

responsibilities that equal or exceed those of other four-star generals. I felt that way especially because of the Israeli airfield job, which was hot at that time.

At one Army staff meeting, I think there were five generals trained as engineers around his table. One interesting discussion arose around the policy that an infantry colonel with a secondary MOS [military occupational specialty] in engineering could be a district engineer while the regulations prohibit an engineer who has a secondary MOS in infantry from being an infantry troop commander.

I told the staff that wasn't fair. I indicated also that these good infantrymen with secondary MOSs in engineering would all transfer to the engineers anyhow, so we'll get the good ones, and the Corps would be better off in the long run.

Of course, the Chief of Engineers worked with everybody on the Army staff, Personnel, General Officers Branch, et cetera. The principal players were the Chief of Staff of the Army, the Assistant Secretaries of the Army, the Secretary of the Army, and, of course, the OMB and the president. The Secretary of Defense was involved, but only on rare occasions, like the Israeli airfield job, which we'll talk about.



General Morris toured Corps of Engineers emergency operations in Buffalo, New York, after a severe snowstorm in February 1977.

Q: What about the Chief of Engineers' relationship with Congress?

A: Congress. The Chief of Engineers has a lot of business with governors too, incidentally, because of the permits. Congress looks on the Chief of Engineers as an individual with whom they have a right to communicate. They do. The Chief of Engineers, to be effective, needs to be able to deal with the Congress smoothly, within the limits of his authority and what he can do, but also, he has to know the players over there and be able to talk to them.

I had much background in dealing with Congress, including 11 years testifying before four committees. I had no problem with the system. I don't mean I didn't have problems with individual congressmen. So far as knowing the players, who to deal with and how to approach them, respond, et cetera, we worked that out pretty well, I think.

As always, we had good people in Civil Works. The directors of Civil Works in my time were McGinnis and Graves, and they were both very good in dealing with outside elements.

The staff in Civil Works, Tofani, Gene Lawhun and Schwaiko and Irv Reisler, all those Civil Works staffers who had been in the congressional liaison field since—were just excellent. They were probably the best team in Washington for doing its business with the Congress.

The trick wasn't doing business with them. The trick was doing business with them and staying within the bounds of propriety. We were always accused of stepping over the line, but in fact, I know of no instances where the Corps used its access to the Congress improperly. Of course, you know, everybody says we did. Those are the people and agencies in our government with whom the Chief of Engineers dealt.

Q: You mentioned Mr. Tofani. Did he leave the Corps during the time where you were the Chief?

A: Joe left while I was in Civil Works. He kept talking about retiring for years, and finally he did. I do remember we had a nice party for him at the Forrestal Building cafeteria. President Nixon signed a letter for Joe.

Several people retired right after I became Chief. Perhaps they didn't want to work for me!

Joe was a good friend, and also an outstanding Corps person. As I said earlier, I think he was the most respected man in Washington, as an individual, in the water resource program and water policy.

Q: As Chief of Engineers you also worked with foreign countries. What other governments were you involved with?

A: The only things we haven't talked about in terms of relationships would be the foreign governments. How to handle that one.

As you recall, as director of Civil Works, I was sent off to Egypt and to Russia under the auspices of the United States government. Egypt was a special project associated with the Suez Canal. Russia was a type of technical exchange. The Corps also was sending people to China, but not under the civil works aegis.

When I became deputy chief, General Gribble sent me to Saudi Arabia. In the course of that trip, I went to Italy and some other places.

The point I'm getting at here is that during the time that I was in the Office of the Chief of Engineers as the director of Civil Works, deputy, and later as Chief, there was a growing attention to the Corps' technical ability in the international arena, and I found I was spending an unusually large amount of time receiving visitors from various countries.

So we set up the International Projects Office. I asked Colonel Bill Badger and Ms. Olga Lansing to start the project. It took over the liaison that I had been doing personally and handled it even better because they had time to devote to it.

Later on, Frank DeMateo, chief engineer for USAID, joined the Corps. Frank had been the assistant project manager for the job at Goose Bay, Labrador, when I was there some years before. I knew Frank from that and had a high regard for him. So he ran the office for some years with Olga's help.

The Chief of Engineers had to operate properly in the international field. I don't know how it is now, but during my time, the international program was quite important.

Out of the international program came several specific events. One had already started, of course—the Saudi Arabia construction program. That probably was the catalyst for setting up the international organization.

The Suez Canal project was important and should have developed into a much greater involvement with the Corps than it turned out. We could not obtain adequate congressional support and the funding needed to go beyond technical advice in the Suez Canal.

The same thing is true, to some extent, in China. Our involvement in China goes back into the 1970s. It's been hot and cold, obviously. It's never really developed into any major program for the Corps' engineering capability. There's been some, but it's been a little

disappointing, particularly in the water transportation field. Everybody's been jumping around trying to build dams, and that's okay, too, but transportation has been left out.

One by-product of the international program, of course, was the Israeli airfield job, and that came to the Corps because President Carter had put it into the Camp David agreement. In many ways, that's probably the most complicated and most difficult job I had in my military service in the Corps. I think we'll save that for a special subject later.

I want to leave the international program by stressing its beneficial results from projects in Africa, South America, et cetera.

Q: We have discussed civil and international programs. What about the Corps' activities in support of the Army and Air Force?

A: We haven't talked much about military, but as Chief of Engineers, I spent more time on military programs than I did on the public works and the international programs. The reasons for that are rather basic. The only reason that the Corps of Engineers exists in the first place is to provide good engineering service to the military. If there had to be a choice—and I hope there never is—the public works program would not be a part of the Corps' mission. The military support would always be—that's fundamental.

However, if the Corps has a civil works program, this peacetime mission greatly enhances our ability to support the military in war and peace. That point's not always clearly understood.

One of the Chief of Engineers' fundamental requirements is keeping the United States Army as his principal target for support service. All the other roles have to be subordinated to that objective. That's why one of our four goals was to support the Total Army. Total Army: National Guard, Reserves, and Active Forces.

We took a serious look at all the things we were doing and how to better support the military—not just construction, but military mobilization, engineering equipment, supply, organization for combat, support of soldiers, and support in the Army—the whole spectrum.

Several things came out of that which I believe we should illustrate. One was the real property management program, which we covered earlier. The idea was that from cradle to grave, the Chief of Engineers should be responsible for real property. He should be required to acquire the land, develop plans and programs for its use, design, do construction, the operation and maintenance, then ultimately the disposal. Those functions all deal with real property, and my thought was the Chief of Engineers should be the responsible person for every bit of that, including the money.

At that time, program management was a big thing. There was a program for research and development, a program for procurement. I published and lectured on the real property management program for the Army, and was successful, basically, in putting all that under one manager, the director of Military Programs, as I'd call it. We finally brought to the Chief of Engineers all of the functions that I mentioned except one, that one—the control of the money for repairs, utilities, and maintenance.

We had the money for the housing, we had money for construction, but we didn't have control over the money for operation and maintenance; however, we did have a lot to say about getting the money and justifying it to Congress and providing technical advice to the facilities engineer in using the money. So that real property management program to me was a simple, clear way to visualize the military program. Out of that idea came what we called

“one stop shopping” for engineering service, which was mentioned earlier in the deputy discussion.

I was always promoting the importance of the civil works program to the Army by keeping us ready to respond during peace-keeping work and especially mobilization for war with competent engineering capability, et cetera.

After getting the Army leadership's support, I began to wonder what happens if they call our hand, call our bluff on mobilization. Could we react promptly? The answer was we could not. We didn't have the mechanisms to convert our civil capability and the construction industry to full mobilization. Only a few generals serving in 1978 had been involved in the total mobilization by this country in World War II—gas coupons, food stamps, rationing, et cetera. A lot of people have planned for total mobilization who have not experienced it. Total commitment of a country to support a war is a rare and mammoth move.

The Corps staff was instructed to go about the business, internally, of figuring out what we had to do to support mobilization. Then General Rogers set up an Army policy that spoke of mobilization. General Meyer followed with a rather dynamic objective for the Army to be prepared to mobilize to meet international requirements.

There were several meetings at the National War College, Fort McNair, on the subject. It turned out that the engineers were well ahead because we had asked ourselves the question some months earlier.

In conjunction with that, we needed to do something with the construction industry in the country. So I looked to the Society of Military Engineers [SAME]. Today, thanks to Walter Bachus [brigadier general, retired], executive director, SAME has a nice program to communicate with and activate the industries.

Then came the environmental and the energy programs. We, the Corps, initiated a survey of energy efficiency on military posts. Colonel Don Weinert and the Strategic Studies Group came up with a program to evaluate energy consumption and energy conservation.

The environmental program on military installations was more difficult. CERL had developed a computerized EIS environmental assessment program. As mentioned earlier, the military commanders in the mid-1970s didn't look on the environment as something that impacted them, within the post perimeters. We tried to change that philosophy, but I don't know that we did a very good job of it at that time. The Army now has the message on using the property properly and on handling pollution problems.

Besides engineering support, energy, and the environment, the Corps' activity on the military posts included the basic construction program in housing and facilities. We were starting the day care facility program. Nobody really wanted to talk about day care early on but, of course, that has developed into quite a program. We were competing very heavily to get the post exchange work, and the commissary work. We got some, but not all of it because they did not use appropriated funds totally.

The really big item for military program management was the Saudi program, and then later, the Israeli airfields.

Q: What did the military construction program look like during your term as Chief?

A: It was pretty big. The Saudi program dominated it. We had—I would say \$6 billion a year in the military program, and I would guess 40 percent of that was Saudi, maybe a little more.

A lot of housing for U.S. forces, the program to build new facilities for tanks, and thanks to General Cooper there was an upgrade program to get our soldiers in Europe in better shape. The rest of it was just spread throughout the country on various posts. Hospitals, we were building hospitals. Hospitals are always tough. Walter Reed was completed during my time. We upgraded the hospital in Hawaii, and the congressional group from Colorado was insistent that we replace the Fort Carson hospital.

Q: What about work for the Air Force?

A: Air Force construction was managed a little differently because the Air Force had AFRCE, Air Force Regional Civil Engineers. Each of our districts had to deal with an AFRCE. In some cases, an agent, a representative, was placed in the district office, like in Omaha.

I think we gave the Air Force better projects than we gave the Army, and one of the reasons was the Air Force probably did a little better job figuring out what they wanted, to start with. The changes were not quite as late, or as extensive. Second, their method of coordinating the work was better. The fact we were working for another customer may have had something to do with it.

Our Air Force construction responsibility, incidentally, was modified somewhat because earlier, Congressman Mendel Rivers divided the world into two parts. The Navy does the Air Force in one and the Corps in the other.

Admiral Don Islen, commander of the Facilities Engineer Corps in the Navy, wanted to adjust the boundary to give him Italy and Sicily. We took over the eastern Mediterranean, which included Saudi Arabia and also Israel.

General Bachus started the annual facilities engineers conference. The first was held in Chicago and I attended that. They're still going on. That was a very good move, incidentally.

Finally, I became convinced that there was a better way to operate and maintain Army facilities than the way we were doing them. I never could understand why, in a state where you have three or four posts in the same general area—like right around Washington, for example—you have to have separate organizations for each installation when the same type of work has to be done for all of them.

So we made a study to consider the Chief of Engineers' taking over the entire facilities engineer program. I brought Colonel [Charles] Blaylock, district engineer, Mobile, to develop a method of consolidating military facilities maintenance. Well, it turned out that was a good idea in the minds of Perry Fliakis, Assistant Secretary of Defense for Installations. Perry had also decided that there was too much money being spent managing contracts on all these various military facilities. When Blaylock's report surfaced, Mr. Fliakis was agreeable to the idea.

I wanted to start in the Norfolk area to get away from Washington and to a location where there were Navy, Army, and some Air Force facilities nearby. He said to do it here in Washington. That's how this Washington arrangement occurred.

I suppose that's worked fairly well, but I do think that the Army would be well served to make the Chief of Engineers responsible for executing the Army installation maintenance program. It would be difficult to organize and structure, but it can be done, and I believe it would save the taxpayers a lot of money while improving service to post personnel and units.

You still end up with this basic problem of who gets the dollars on the post. I hear that the Congress now has directed a study of 20-some installations, some Air Force, some Army, some Navy, to come up with a single plan for reporting operations, backlog of maintenance

repair, et cetera. I suppose a concept for organizing and operating facilities and engineering will emerge.

I know I'm in a minority there, and it's a program that may never fly. Still, I think it's sufficiently critical that it should never be allowed to die completely. As the Army gets smaller, it seems that it's more and more important that the limited moneys and manpower available to maintain and operate these posts be put to the maximum productivity. I think the Chief of Engineers could manage such a program, similar to the way we operate and maintain the facilities in the public works programs.

The money thing could be worked out with the post commander in some way. So that idea—that egg was laid, but it's never hatched.

Q: I've got one here that may fit in this area. I think it was in 1976 that the Corps of Engineers was designated a combat arm?

A: A little before that maybe. [Lieutenant] General Frank Camm, when he was at TRADOC, was successful in having the engineers designated as a combat arm. That was something he, as well as a lot of other engineer officers, strived for over many years. He takes a lot of pride in the fact that this was accomplished—and he should. Later these efforts contributed, to some extent, to our becoming a separate command, which was a matter of pride among the Army engineers. It put us in a different reporting category in things like command selection lists, et cetera. Our commanders are now selected as part of the same command selection list for the rest of the Army.

Q: Let's return to the subject of international programs. You have some additional information you would like to discuss.

A: Yes, I just want to wrap up the international as a general subject and, of course, later on, under projects, we will become more specific. I want to be sure the record reflects that there were several peripheral events that influenced my thinking on the need for the Corps of Engineers' becoming involved in international work. One was PIANC, the Permanent International Association of Navigation Congresses, and the other one was the International Committee on Large Dams. The former was made up of countries as opposed to individuals, and therefore when you went to one of the meetings, you were really speaking with the counterpart in government about their country's interest in water and water transportation development.

The International Committee on Large Dams was made up of members of the industry and also individuals from various national organizations. The important thing is that in each of these the United States was looked to as a leader in water resources and environmental programs. I felt that there should be a way that our national engineering potential could be brought into the international arena.

Even though it wasn't an assigned role of the Corps of Engineers, there was no reason why we shouldn't use our opportunities to open the doors for the American engineering and construction industries and also to further relationships of the United States with our friends throughout the world. So I became pretty solidly convinced that we should do whatever was possible to transfer American knowledge and technology in the engineering and construction fields both in the military and in the public works arenas.

As opportunities began to reveal themselves through discussions in the international organizations, we soon found countries wanting our advice in a variety of subjects. It was my

hope that we could develop this program to help the American construction and engineering industry and also to help the quality of life throughout the world.

Unfortunately, the ability of the Chief of Engineers or even the Corps to expand this program depended a great deal on funding and internal support. There was in the Corps, and in the Executive Branch of government, a feeling that the talent of the Corps of Engineers had been established to perform only those missions which were funded by the United States government and primarily within the United States. These missions might be neglected if the foreign program became too demanding of manpower assets. As a result, the international initiative was constrained.

I mentioned the Suez Canal earlier, and there was a typical example where for just a few thousand dollars the United States could have had a very major role in reconstruction of the corridor from Port Said in the north down to Suez City at the southern end of the canal.

In addition to the constraints placed on the Corps because of manpower diversion, there was a further constraint placed on the U.S. construction industry by U.S. tax laws. Whereas other nations were actually subsidizing the construction industry seeking international work, our government was tilting the playing field to the disadvantage of our industry. There was more to it than just the people doing the work. In the Saudi program, as we will probably discuss later, in addition to the work, all the materials and supplies were produced in the United States. If we put up 10,000 homes, there were 10,000 refrigerators, 10,000 stoves, et cetera, made in the United States.

The erosion during the 1970s of U.S. involvement in the international construction and engineering fields was dramatic. In the mid-1970s, American contractors performed 90 percent of the work in Saudi Arabia. By 1980, I'd say 15 percent of it was by American contractors. The Koreans with Korean government support took over most of the major jobs. Morrison Knudsen lost an \$800 million job to Sam Whan in Saudi Arabia. The Japanese whipped American dredgers in dredging the Suez Canal and other areas of the world. The Dutch government financed their contractors and actually financed some of the jobs to help their contractors get work.

So the international initiative may have been a great idea in many ways, but the ability of the Corps of Engineers to ensure American participation in the international arena became more and more difficult. Even though our initiatives in this area increased, overriding counterforces came into play. Ironically, the desire to have American effort never diminished on the part of the countries which looked to the Corps. Unfortunately, the ability of the American engineering and construction industry to respond became so constrained that the program began to atrophy.

Q: During the 1970s the Corps came under a lot of criticism, especially from the environmental community.

A: Somewhere in this dialogue we've got to talk about the Corps' image and reputation in the public arena. In 1970 there were no problems finding articles critical of the Corps of Engineers. It was a little frustrating because I believed then as now that as people know the Corps better, opposition diminishes proportionately. The better they knew us, the better they liked or at least understood us. So we had a real challenge in developing such an understanding.

I felt it was important to take advantage of every opportunity to speak to every group which asked us, whether they were opponents or friends. I welcomed appearances before the Sierra Club, the Wildlife Federation, Friends of the Earth, Ducks Unlimited, whatever. Sometimes

I felt these groups didn't want to hear our story. In any case, when we began to communicate with the people, we realized they also had certain objectives to protect or pursue. Since the Corps of Engineers was considered to be the bad guy, it made a pretty good target. Even so, we should not keep a low silhouette for fear somebody was going to shoot at us. That would be a poor approach. I believe it's better to keep a high silhouette and let people know what we stand for, even at the risk of getting shot at occasionally. So we went on an extensive program to be responsive and to participate. We began to react to criticisms by the press and in publications which were based on errors in the facts. I think I may have covered this point earlier.

I never believed that we should take on any editorial. Everybody is entitled to his own opinion, whether we agree with it or not. We should be serious about the facts. So we established a program that we would respond to public criticism if erroneous facts supported a position. That turned out to be a simple but effective move.

In the course of implementing it, we had interviews with the editorial board of the *New York Times*, with the management board of the *Reader's Digest*, and individual discussions with national writers. In this approach we never argued—I never did, at least, and I don't think our people did—although I visited most of the senior organizations myself. I usually took Locke Mouton, our public relations man, along. He helped prepare our position carefully.

I distinctly remember the *New York Times* visit. The writer was named Wayne King, and after visiting with him and his board, we later ran into each other at the Tennessee-Tombigbee hearing in Mississippi. King then wrote a more positive article about the Corps than I think he would have had we not visited with him earlier.

At the *Reader's Digest*, a man named James Miller had written a very critical article on the Tennessee-Tombigbee project and the Corps in general. Errors in fact prompted me to visit the leadership of *Reader's Digest* in Pleasantville, New York. We spent a very busy morning going through the article step by step. After that, I do not recall any critical articles based on nonfactual data.

A lot of articles began to appear which were authored within the Corps or by "question and answer" interviews. I had a very good experience with the Bass Anglers Sportsmen Society. BASS conducts an annual fishing contest that is publicized nationally. They had been fairly critical of the Corps; however, after attending one of their tournaments and visiting with Mr. Scott, Ray Scott and his people, they published some decent articles about the Corps on how it was handling the water resource program, et cetera.

The Corps personnel and I, in particular, became much more available and exposed. I went to the Audubon Society's annual meeting at Estes Park and made a keynote presentation. I believe we got across the point that if they were able to change the laws, that we'd be delighted to implement the changes; however, in the meantime, we intended to execute the laws in force. The same thing with the Fish and Wildlife Service meeting in Denver. So the point of this discussion is that not only the Chief but all the people in the Corps—the division engineers and the district engineers—were asked to make themselves available and to become active, not reactive. I think it had a positive effect.

We never, of course, expected to be free of criticism. On the other hand, we felt that we had to take some offense against unwarranted, unjust, and erroneous criticism rather than assume a passive attitude that with time, all will pass. It wouldn't pass.

Publications of various sorts emphasized the Corps' role. I mentioned *Water Spectrum*. We also published special publications on dredge material, technical fliers on our research programs, et cetera. The aggressive public relations had several internally good effects. It bumped up morale and also began to get the team singing off the same sheet of music throughout the country. The latter became especially important in meeting the reorganization challenges which arose during the four years I was in the leadership position.

Q: Could I ask one follow-up question on that? Did this mean any changes in the Public Affairs Office, in the Corps headquarters?

A: Not really. We had a good civilian staff. There was Locke Mouton and Ray Leonard, also Warren Pappen, who was over in Civil Works directly under the director of Civil Works. Mouton was very well trained in the public relations business. He'd been working in Albuquerque and Tulsa Districts years before as a public relations person. He wrote well and he had an incisive view on things. So the staff was good.

Usually, an engineer colonel was the Public Affairs officer. General Kem, Sam Kem, as a lieutenant colonel was a very good Public Affairs person. Our public relations staff coordinated frequently with the Army Public Affairs people in the Pentagon.

As mentioned earlier, the Corps won the Silver Anvil Award, the Oscar for public affairs, with the *Sergeant Floyd* Bicentennial effort.

About the middle of my term two things happened at the Pentagon which affected the public affairs activities. First, they offered us a nonengineer professional public relations officer—Colonel Tom Garrigan. Garrigan was excellent. He knew most of the name reporters in town from his time in the Pentagon. He brought a new twist to our efforts.

The Army Chief of Public Affairs suggested that the Corps produce a magazine, a newspaper. So we started the *Engineer Update*. The first one was published in 1978 and has become pretty popular throughout the Corps. I hope it is being distributed to retired people and friends as well as just to active duty and permanent people within the organization because it should continue to get broader attention.

While on the subject of public affairs activities, I should cover a few specifics. One of our public affairs officers was a Lieutenant Colonel [John V.] Foley, who later became district engineer in Los Angeles. I was asked to appear on the NBC *Today Show* in 1974. Foley helped prepare me before we went to New York. As covered earlier, and while director of Civil Works, a Mr. Heuvelmans from Florida had written a book about the Corps of Engineers ruining the rivers of Florida.

He had been on the *Today Show* and gave us the works. I was asked to come up the next day, which I did, and was interviewed by Mr. Frank McGee. It came off okay, partially because the Public Affairs Office prepared me and managed the visit nicely.

A bit earlier, I had also been on *60 Minutes*. Now, the *Today Show* was one thing, that's live so you know what happens is what happens. On *60 Minutes* they took about four hours getting about maybe a minute on TV. Morley Safer did the interview in my office in Civil Works. Locke Mouton was present and helped me prepare.

The subject of their program was the conflict between the Fish and Wildlife people and the Corps over the effects of navigation and flood control, especially in the upper Mississippi. The *60 Minutes* process was interesting. Mr. Safer was very courteous as was everyone else while asking a lot of questions. As time went by, we became much more comfortable with each other, at least I did, and at the very end they made some comment about the Corps'

rebuilding the country. I mentioned how the Corps could help the Department of Transportation rebuild the Northeast railroad corridor. Joe Tofani had worked up a "Red Book" on the subject. So if anybody saw the show, they might remember that the last thing Morley Safer said referred to the Corps of Engineers' having built so much of this country, et cetera, and then commented to the effect, "They're not done yet. They've even got a red book on how to rebuild the railroads." That's what came out on television. I thought it rather humorous, but we got a lot of publicity out of that that we didn't necessarily expect and I'm not so sure we wanted. We heard from the Department of Transportation.

The last event of national TV significance involved General Clarke's 1970 interview by Lem Tucker. Tucker is still active. In any event, the program really did a job on General Clarke. It wasn't a live program. They managed the film to show the Chief at bad angles with the bright lights. They showed dead fish in the river that had nothing to do with him. The scenario was put together in a way to make General Clarke and the Corps look like villains. That was in 1970.

Almost ten years later, in early 1979, the network considered a follow-up. They phoned and asked if I would participate in a ten-year review. I was delighted. Mr. Tucker came over and we sat in my Forrestal office. It was a very good interview. We got along fine. There were no rough spots to speak of. The conclusion had to be that the Corps had done a much better job than they had anticipated when they put the earlier program together.

The reprise was never shown. Later, after I'd retired, I was on a trip to Chicago and a group of reporters were also on the plane en route to the funeral of the well-known newsman, Max Robinson. Mr. Lem Tucker was among them, and I asked him about why he didn't produce the 1979 interview. He indicated the Corps had done such a good job that there really wasn't anything that would be of national interest. He seemed sincere when he indicated he would have liked to put it on, but his bosses wouldn't let him show it.

The important point is that the Corps was a whipping boy for a long time, but as we began to get our act together and to do better environmental work, better understanding followed and criticism diminished—"diminished," not "ended."

The Corps as a public institution owes the public an honest face so that the public can see the Corps for what it really is. It's almost as bad to fail to produce the honest picture as it is to tout something that you're not, in the hopes of getting some kind of credit.

So that's why I wanted to discuss the public relations program. I think the Corps' image did improve over that period. Similarly, the same thing happened with the Congress. Our relationships with the Congress remained at a high level professionally in spite of the fact we had some extremely difficult projects ongoing: Tenn-Tom, Lock and Dam 26, the Ohio River, on and on, plus the permit program.

Q: What other agencies of the federal government, outside of the Defense Department, did the Corps work closely with during your term as Chief?

A: With the formation of the Department of Energy and with the development of the EPA, there were two new organizations on the scene during the decade of the 1970s which needed engineer support. The Corps made an effort to be available to those people. The Corps does a lot of work for EPA now and hopes to do more work for the Department of Energy.

At first, our work with the Department of Energy was difficult. When General Gribble retired, the last thing he said to me was, "Jack, in a few days you're going to get a contract to do the strategic petroleum reserve for the Department of Energy." The people he was dealing with

soon left the Department of Energy, and we ended up handling only the real estate—none of the government construction management.

It was the Department of Energy that moved us out of the Forrestal Building. I thought the Corps was in very good shape to work with the Department of Energy, but there were people in the organization that wanted to build their own engineering capability. Even after I retired, I met with and talked to the people in Department of Energy and explained my view that they needed an organization to get on top of the hazardous and nuclear waste problem. We spent half a day on that subject with their top people. Recently they have given the Corps some work out at Hanford and other places. The point I'm trying to make here is it takes a long time to get the relationships and associations going.

With EPA it took six or seven years following an initial arm's-length kind of arrangement. Finally, while Doug Costle was administrator of EPA, we signed an agreement for 600 man-years of Corps effort to help the administrator of EPA with the waste water problem.

When I left the job as Chief of Engineers the last couple of things I said to General Bratton were, "Leave the districts alone," and, "go get the hazardous waste program." He indicated his concern that the Corps was not qualified to do the hazardous waste program. I said, "Neither is anyone else, and the Corps can become qualified more quickly than anyone else." That's worked out to a degree.

Work for others has to be kept on the Chief of Engineers' things-to-do list. It doesn't matter who the others are, but you either go forward or you're going to go backwards. With the Corps' construction involvement going down, it has to find other places to use its talent, and work for others is one way.

I never thought we had quite enough work for the Department of State. We made some inroads on that. The trip to China was a by-product, to some extent. There were other flashes. The Corps could and should have done the foreign building office work in the embassy field.

USAID was another organization within Department of State that sporadically gave the Corps work internationally. HUD, in their protocol with the Russians "housing and other construction," gave us the "other construction" piece as mentioned earlier.

Then there were the laboratories. At that time our laboratories, WES, CERL, and CRREL [Waterways Experiment Station, Construction Engineering Research Laboratory, and Cold Regions Research and Engineering Laboratory] performed a significant amount of work not only for other federal agencies but for certain industries at times. The CPAR program, which Bob Page put together, is a good idea. I felt all along that if the Corps was going to execute research at public expense, the public was entitled to know the results and that information should be transferred to them. Thanks to Bob Page that happened, ultimately.

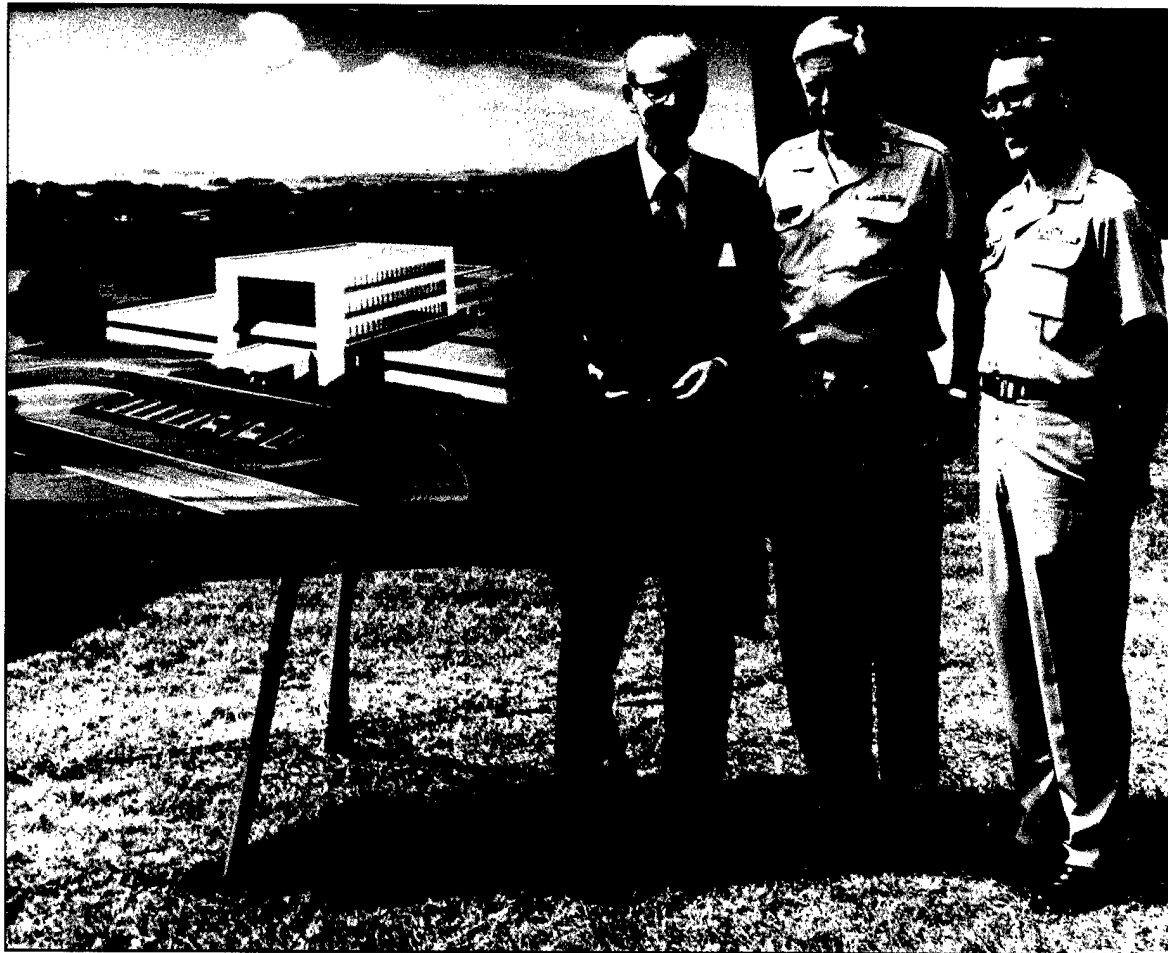
I also thought the United States Corps of Engineers labs should be allowed to support private industry. After I retired and was president of PRC, Engineer Group, the Dutch put their Delft Laboratories behind one of their contractors to bid on a major international bridge job. Finally, the Corps of Engineers laboratories were allowed by Congress to support private industry under certain conditions.

The mayor of Seattle came to see me in 1979 and asked for some help on a new bridge. He wanted the Corps of Engineers' technical advice on it. I was told by the staff we couldn't do it because there was no authority. That was correct. On the other hand, there was no directive not to do it. It was a vacuum. At least that was my understanding.

The point was, though, it was the right thing to do. After all, the city of Seattle was another government within the United States spending federal dollars and needing help. The Corps was available, had the capability, and would be paid for its service. Finally, the Corps helped Seattle. It was not a great deal of effort but it was enough to solve the need. That began the whole idea that we should probably make the Corps' capability, through its labs and otherwise, available to others under selected conditions.

We've done work for the Department of the Interior, including the Bureau of Reclamation. I think it was either General Hatch or General Heiberg along with General Wall who preached the idea of the "federal engineer." That's the concept. I think it's a little stretch and risks some resentment to say, "The Corps will be the federal engineer," but the idea is right. The more work you do for others and do it well, the more likely you are to get there by evolution rather than by dictum. If you put up on the table the thought that the Corps is going to be the federal engineer, you would probably get a lot of competition and argument about it. If you get there by growth, you'll probably make it because the Corps can do all these things and do them well. The Congress recognizes that and always has. That's how the Corps grew in the water business in the first place.

So I think the work done for others is more than just the work itself, it's a whole philosophy. It's necessary for the survival of the Corps. In the 1970s we could see the construction work going down and the operation and maintenance going up, but in order to keep our tools sharp



Groundbreaking ceremony of the Arthur Casagrande Building at the Waterways Experiment Station in Vicksburg, Mississippi, on 28 June 1978. Next to the prominent engineer, Casagrande (left), are General Morris (center) and Colonel John L. Cannon, commander and director of WES.

in the field that we were best qualified for, we needed to have work of the type that required our engineering staffs to be busy, not only our operation and maintenance staff. So work for others was critical. Is critical. I think we can do a lot more. I think we should do work for states if they need us and can pay for the service.

Q: One question about work for others. In more recent years, some of the assistant secretaries have been reluctant about the Corps' participating in work for others. Were there any problems with the Assistant Secretary or the Secretary of the Army on your initiatives in this area?

A: My only answer to your question is I didn't find that a real problem with the assistant secretaries during my term because I did have the president's and the Secretary of the Army's support.

Q: Responding to natural disasters and emergencies also required your attention as Chief.

A: It seemed that every year there were one or two events that required immediate reaction.

As our government experienced these emergencies and more and more of the public was impacted, the organization to deal with the emergencies was adjusted. As a result, sometime after Hurricane Agnes and in the mid-1970s, FEMA came into being, Federal Emergency Management Agency. That had an impact directly on the Corps. In emergency conditions, the law allows the Corps of Engineers to use funds otherwise appropriated to prevent loss of life or critical damage.

However, to go beyond that into the clean-up phase or to provide relief after the event is another matter. Prior to FEMA the Chief of Engineers could be more decisive in responding to disaster matters. During Agnes, General Clarke had to be sure that the Office of Emergency Preparedness was aware of what he was doing to relieve suffering and clean up the damaged areas. The Corps was much more responsive in those days. Today, in order to enter the repair and clean-up phase, FEMA must direct the Corps to act. I'm not being critical of FEMA, but it's another layer of decision making.

Because of the flooding that had occurred in the early 1970s while I was director of Civil Works, we had set up in the Chief of Engineers' office an Emergency Operations Center to monitor floods and disasters. Today, the center has matured and increased in its effectiveness.

I noticed during Hurricane Andrew that the Army became more visible than the Corps of Engineers. I have no problem with that, but I'm trying to emphasize there's been a major change in the authority and a reduction in the flexibility of the Chief of Engineers.

My first experience with emergencies was "Operation Snowbound" in the Midwest in 1949, January of 1949. Based on a series of emergencies over 25 years, I believe in many ways the public was better served when the Chief could respond directly rather than through FEMA.

The important change was setting up FEMA. Fortunately, General Ben Lewis, who was a Corps officer, helped to develop FEMA procedures. George Orrell, who had been with the Strategic Studies Group, went to FEMA also. George was just an outstanding civilian employee. He did great work for the Corps and he was a real asset over at FEMA.

My last emergency involvement was Mount Saint Helens. Incidentally, Mount Saint Helens was the catalyst that led to our finally being able to get a new aircraft. I was out of the country at the time, and General Heiberg used the Chief's plane to visit the site, but he couldn't get there as fast as everybody else did because of the quality of the aircraft. The Corps did a tremendous job with the Mount Saint Helens disaster. Because of my trip to China and the Israeli airfield matter, I had practically nothing to do with the critical phase. The emergency

work was initiated promptly thanks to General Heiberg's good work, and that of the Deputy Chief of Engineers—Major General James Johnson.

The main thing about the emergency program, in my judgment, is that the Corps has a great capability to respond because of the quality and geographical setup of the organization. When the Corps' men and women, even retired individuals, know the Corps is on the firing line, they'll respond.

The only other emergency—we've already talked about it—is military emergency. The Corps, along with the rest of the Army, needs to keep current on what to do in case there is a mobilization or a major military conflict.

Q: You mentioned before we started today that you recently ran into a friend who had an impact on your career.

A: Yes—[Brigadier] General Arch Hamblen, retired. People who have been important in your life are too often forgotten. Hamblen was a classmate assigned to West Point when I was being considered for assignment there. He personally went to see the commandant and suggested that they accept me. That ultimately happened.

Later, he was transferred to the Pentagon just before I was ordered to the Army Legislative Liaison office. Arch, a very religious man, was in charge of the general officers prayer breakfast. All the members of the prayer breakfast were generals except for Colonel Hamblen, who took care of the administrative arrangements.

Another colonel joined—Elizabeth Hoisington, soon to become the first woman general in the Army. Arch convinced them that he needed some help, and so I was brought into this as his alternate and the number two colonel. I've forgotten the details, but I managed the breakfasts during a period when we studied the book of Mark. If the general who was supposed to have the subject on a particular day didn't come, then the colonel had to do it. Well, we had a lot of generals that didn't want to talk about Mark, I guess, because I recall I gave many of the sessions.

Later, the promotion board that selected me for brigadier general was comprised of several generals from that prayer breakfast. Apparently my dissertations on Mark made a favorable impression, and I can thank Arch Hamblen for his role in my getting promoted to general. Saint Mark probably had a lot to do with it too.

Q: Who was your driver when you were Chief?

A: When I was director of Civil Works I had a driver named James Boswell. Boswell was very natty and devoted to his boss. It didn't matter if it was Morris or Koisch or whoever had the job. James was probably the best driver the Corps had. He always dressed properly and wore a cap and he was always available.

When I moved up to be the deputy I brought James with me. Then, when I became Chief, we had a real problem because the Chief's driver was "Jeff" [John Jeffries]. Jeff's a wonderful man, really, but James had been with me too long to abandon him, so Jeff had to move aside.

I noticed in 1977 that James was becoming less alert and his driving more erratic as time went on. So in the summer of 1978 I asked him if he didn't think it was time to retire. He didn't. So I asked James to see a doctor. He did, and we learned he had terminal cancer.

James had accumulated almost a year of sick leave. Actually, it turned out to be enough so he could go on sick leave for the period of time necessary to reach permanent retirement and certain benefits.

When I mentioned this to James' doctor, he predicted James would be lucky to live the year. Well, he made his retirement date by just five days. It was sad. I lost a good friend.

Then Jeff came up, and I have to say Jeff was excellent and is still a good friend. Those drivers were a great part of the Corps family. Not many people realize that, but you know, when you're going to a tough meeting or congressional hearing, it's nice to have a driver who will listen—and not argue.

Chief of Engineers: International and Military Projects

Q: Let's begin talking about the major projects that occupied your attention when you were Chief.

A: Well, we're down to projects. Let's take some of the easy ones first. Russia. While director of Civil Works sometime during President Nixon's Administration a protocol was set up with the Russians called "housing and other construction." "Other construction" was everything except housing and therefore was the most diverse and often biggest piece of this package. It included waterways, dams, tunnels, highways, ports, and all things except housing. The chairman of the group was always the Secretary of Housing and Urban Development [HUD]. That was Patricia Harris during our time.

In December of 1977 I went to Russia as part of the housing and other construction group and took the chief of Operations of the Corps, and several engineers from CRREL. We had asked before we went if we could visit the railroad tunnels they were digging and also to go to one of their laboratories to visit their dam and hydraulic design facilities. The Russians wouldn't show us the tunnel because they'd had some problems with it.

That meeting was quite interesting and they later sent a delegation to the United States, but nothing, to my knowledge, ever came of any of our initiatives with Russia, either from the HUD's or from the Corps' standpoints. There was a lot of activity between CRREL and the Russians which from a scientific standpoint was productive. To my knowledge, very little in the engineering field other than research and development materialized.

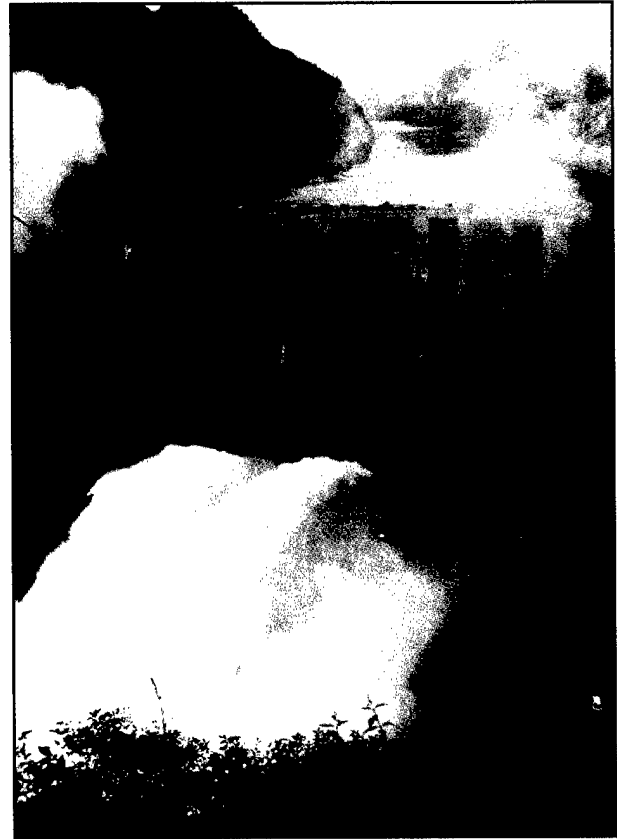
On the other hand, a similar situation arose with China during my tour as Chief of Engineers. Vice President [Walter] Mondale had been to China in August of 1979 and as a result of that trip had agreed to send a delegation of American engineers back to China to discuss water resource development and hydropower, specifically the Three Gorges Dam. That delegation left in late February of 1980 and came back in about three weeks. The delegation consisted of Dave Freeman, the chairman of the Tennessee Valley Authority, Assistant Secretary of the Interior Martin, and a group from the Bureau of Reclamation, the Bonneville Power Authority, and the Corps of Engineers. The principals were allowed to take their wives. Gerry was allowed to go with the wives of other chief delegates.

The Corps also provided the exec and secretary for the whole group. Our highly qualified group of engineers included Duscha, Murden, and Robert Bruckner.

We arrived in China and were divided into several groups. Mine included one Tennessee Valley Authority man, a couple of Corps people, and several Chinese engineers. Our host was the Minister of Water Resources and Electricity—a Mr. Li Rei. He was a Mao supporter and had had a very tough time in the Nationalist prison before he was released. He was a top party



The dam at the Shimen Power Station during General Morris' trip to China in 1980.



The dam at the Wujiangdu Power Station under construction during General Morris' trip to China in early 1980.

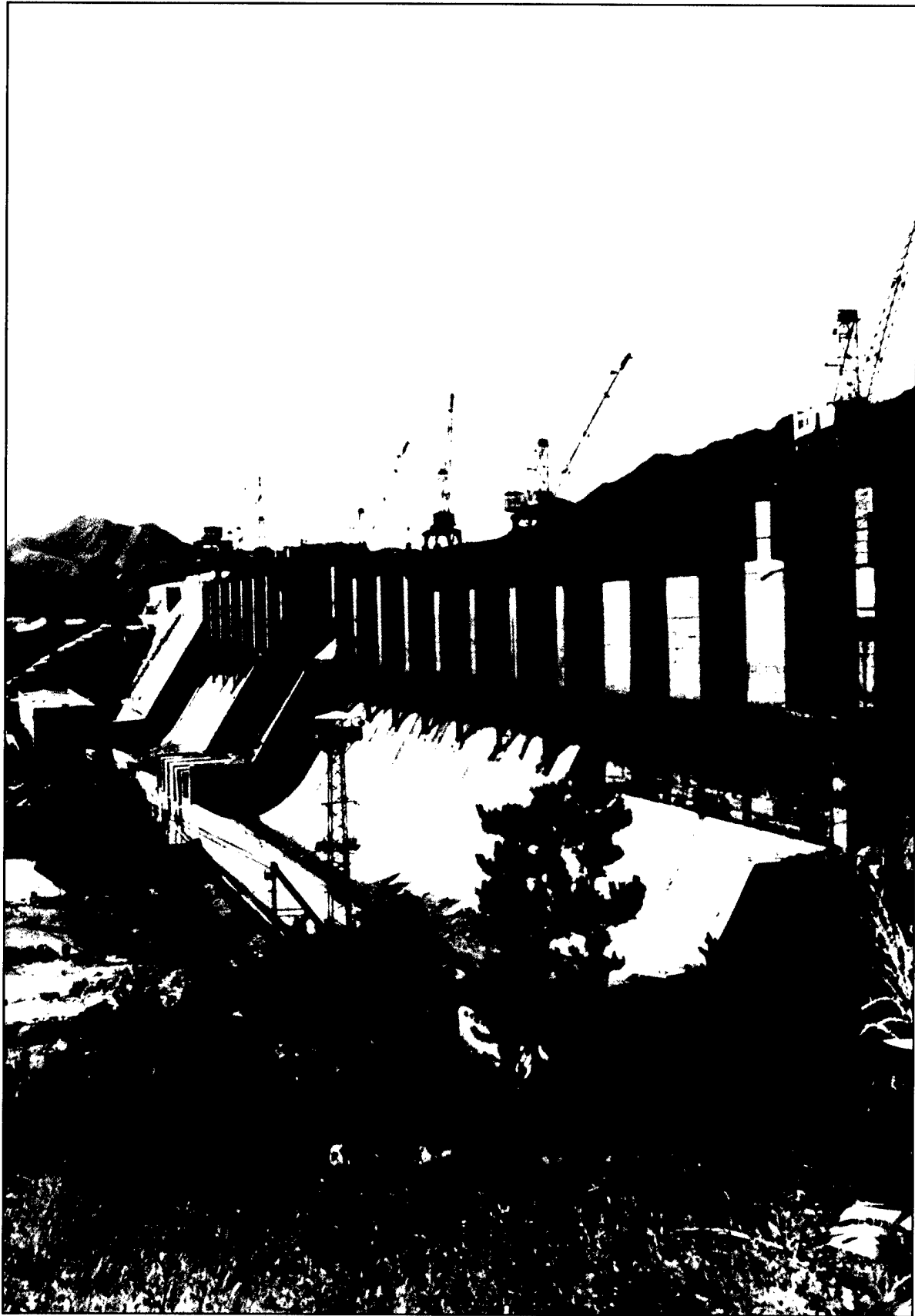
member. Li Rei wanted to go with the Corps people. Lloyd Duscha was with me. Bill Murden went with another group.

The bureau group went up the Yangtze River to Three Gorges whereas our group traveled south to the Pearl River. Ours proved to be a tough trip for about a week. We traveled in a new Toyota van through mountain trails and narrow roads looking at dam sites. The accommodations in 1980 were Spartan government houses. In some places, we slept on beds with wooden or rope bottoms, no heat, and outside toilets. It was cold in February. Everything was very clean. A Chinese girl came in the morning and brought us a pitcher of hot water. Unless you hurried it was soon cold. The food was marginal but it was a military-type setup and nothing that I had not encountered before as a soldier, but it was primitive by our construction site standards.

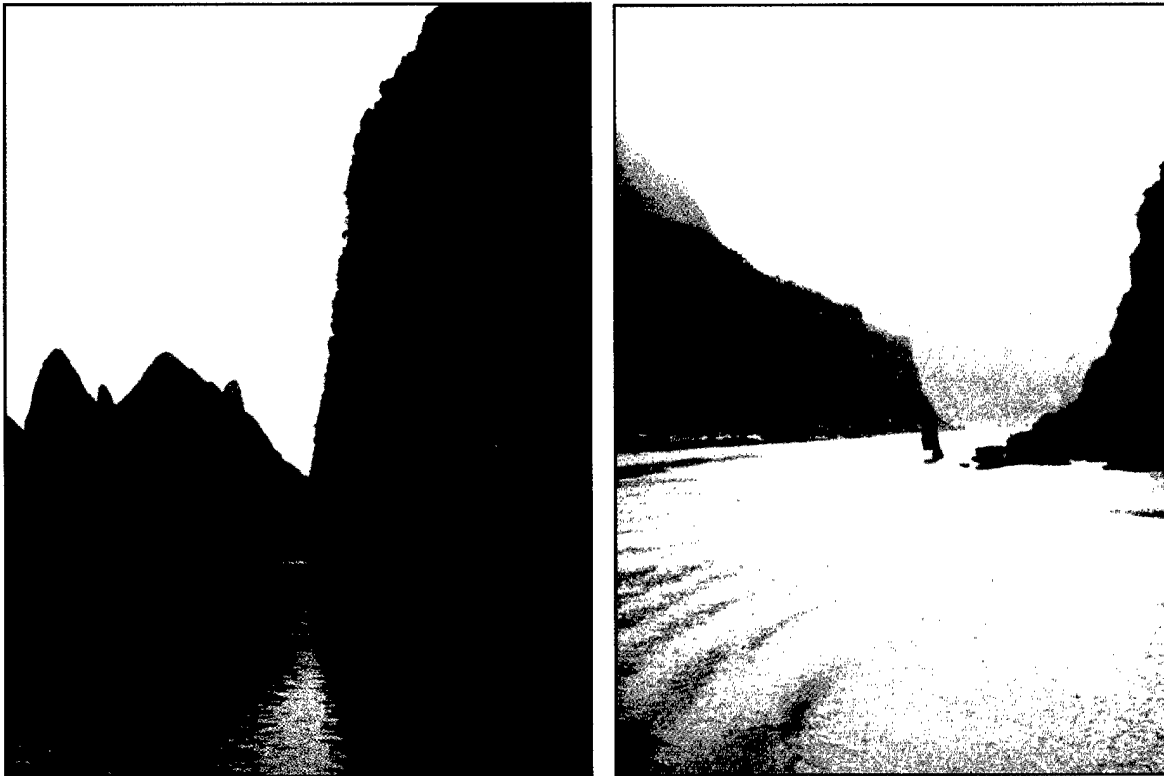
At one site I visited a nearby troop unit which was doing some initial exploratory work on the dam site.

I spent a lot of time with Mr. Li Rei. Somewhere along the line when we were alone he brought up the subject of the Three Gorges Dam and what did I think of it. Since I had not seen the site, I only noted that we had seen several other sites which with less money would get power sooner. I had the feeling that he agreed.

Yichang, a major city on the Yangtze River, is the site of a dam called Gezhouba. The entire American group assembled there. We were staying in a construction camp, again, which was



The dam at the Panjiakou Power Station during General Morris' trip to China in early 1980.



*Site of the Three Gorges Dam.
Photographs taken during General Morris' trip to China in February 1980.*

very primitive, no heat at night and little heat in the daytime but occasional hot water this time; however, you didn't dare get up in the middle of the night because it was bitter cold. Seems like everyone except me became ill.

The next day we boarded a riverboat and went up river to the Three Gorges Dam site. We passed beautiful scenery into the high gorges and debarked to visit dam site borings. After a brief visit we had lunch on the boat on the return to Yichang. Then back to Beijing. In those days, the best hotel was the Beijing Hotel. The present new hotels were not yet built. Cars were rare; everybody walked or rode a bicycle.

Contrary to Russia, the Chinese were very friendly to the military. I wore my uniform to the first briefing and I realized right away I was getting too much attention. Our chairman, Dave Freeman, was being ignored to some extent so I wore civilian clothes thereafter.

Our headquarters in Beijing were in the American Embassy where our whole group met to prepare our final report. En route to Beijing from Three Gorges, we traveled by train for part of the trip during which Lloyd Duschka, Bill Murden, and I discussed the Three Gorges Dam. Having seen other dams, I felt I should raise some questions about Three Gorges when we met with the Chinese officials. The Corps team seemed to support my views. As a result, I told Mr. Freeman, as we were preparing for our final briefing, of my reservations and questions about the Three Gorges Dam.

As an example, the Chinese talked about comprehensive base planning, project planning. They had all the right words but I had the feeling that they maximized the power productivity and then they stuffed flood control, transportation, et cetera, into the project. That bothered

me. I gave Dave Freeman a preview of my briefing. He indicated I should make my points. I then asked if I could go last because my presentation was going to be controversial.

As the final meeting with the Chinese proceeded, everyone's presentation was smooth and pleasantly received until I came along. I began by mentioning we hadn't been there long enough to get answers to many questions, however, our visit had generated some questions that needed to be answered. Perhaps they had the answers to them and if so—fine. If they didn't, they shouldn't build the project until they got the answers. That was the thrust of it.

The guests were all on one side of this long table and the Chinese on the other. I was sitting next to Mr. Freeman, who was straight across from Mr. Li Rei. The Minister of Commerce was there with the Minister of Communications, a woman. They did not seem to support the project. Also present was Mr. Wei, the chairman and president of the Yangtze River Development Authority. Of course, he was very much in favor of it.

Anyhow, I indicated there were five questions.

1. Would the Yangtze River be more important over the next century for transportation or for hydropower?
2. Would it be more productive to build a number of smaller, yet large projects on the excellent tributary dam sites, which would get their industrialization program moving forward more rapidly? Even the smaller ones would be as big or bigger than anything in the U.S.
3. If you're going to have flood control, and you're going to build levees below the dam, why not raise the levees higher and strengthen them and lower the Three Gorges Dam?
4. What problems were they going to have with environmental effects upstream in the reservoir and dislocation of hundreds of thousands of people?
5. Were they prepared to put all their eggs in one basket in case they had a disaster, a military operation, or some other event that put the project out of order?

So those were the five questions. The implication was that the project should be held off until they were answered. In the course of doing this, Mr. Wei from this Yangtze River Development Authority made an outburst but Li Rei kept order.

After the meeting ended the Chinese group came over saying things to me that I didn't understand. Turned out, though, many were favorable. I was surprised that there was so much support for not proceeding with that project at that time. I don't suggest there was support for abandoning it, but over a decade later they still haven't built it. They're going to build it, but they have changed their configuration. It's lower. The navigation situation is much better than it was in the older project. It's a tough job but they can do it; it can be done. They've found a way to relocate their people, apparently. I'm satisfied the questions were valid and worth answering. I expressed to Mr. Li Rei before I left my hope that I hadn't done anything to cause a big problem but I felt that we were asked to come over to give our opinions.

There were several articles written against the project and I was interested, and disappointed to a degree, to see that there was only one article that intimated that the Corps of Engineers might have had an influence on the project's description and configuration.

I went back to China in 1985. I taught a summer course in management as part of the University of Maryland's exchange with East China Technical University in Nanking. It was a very interesting experience.

Oh, I forgot to mention earlier, the original protocol for the visit to China dealt with hydropower only. I asked the State Department representative to include "hydropower and related water purposes," which gave us a reason to look at navigation. The Corps group stayed three extra days after the others came home to look at navigation issues.

When I went back in 1985 I was asked to come to Beijing to discuss water transportation. I was given an invitation to survey water transportation facilities in China. I told them I would like to do it, but I was no longer a member of the government, I was a private citizen, and they should work that out with the Corps of Engineers. It never happened to my knowledge. That's too bad since the Corps seems to have been circumvented, more or less, by either private enterprise or other government agencies, such as the Bureau [of Reclamation] in the dam-building arena.

I do think there's a great need for the Corps over there on the transportation side. The approaches to the harbor at Shanghai need engineering attention. Inland locks, dams, and channels need to be reviewed and modernized. They need an overall water transportation system. I think the Corps has a role to play there when the political situation permits, and I believe the Chinese would like very much to have the Corps of Engineers participate. In May 1993 I was asked by the Chinese embassy here to arrange a meeting with the Chief of Engineers' people to talk about getting the Corps back into China. Whether it will happen, I can't say. I do feel that the U.S. government should at least keep the door open so if the right circumstances develop, the Corps can move in. The Corps' presence would make way for American business.

I was able to convince the Secretary of Defense's office that the Chinese may not need American help in engineering and design; they can do that. They didn't really need our help in construction practices—they'd rather use their own labor-intensive system. But they really needed our organization and management techniques. That's why I taught that summer.

My term as Chief was not the only one that dealt with China. I know that General Heiberg went later with Secretary Dawson.

Q: Last time we ended by discussing the program in Russia and the program in China, but those weren't the only international programs that the Corps had going on when you were Chief of Engineers. Perhaps we could pick up talking about the program in Saudi Arabia.

A: Yes, I believe I covered earlier the philosophy for the international program and setting up the International Projects Office. The foundation for that idea really was the Saudi program.

Going back to the President Eisenhower days, the Corps worked in Saudi Arabia building an air terminal in Dhahran under an engineer assistance agreement. Later, when the Saudi Arabian government found itself with financial resources and the need to modernize its country, one approach was to re-institute the engineer assistance agreement. Under the agreement between the Corps of Engineers and the government of Saudi Arabia, in its more recent form, the Saudi Arabian government could develop a modernization program and finance it by depositing money in a facility in the United States against which the Corps of Engineers could charge its expenditures for the Saudi program. The important point is this major program costing \$19–\$20 billion was entirely paid for by Saudi money, not by U.S. money.

My personal involvement did not materialize significantly until I became Deputy Chief of Engineers in 1975, and, by that time, the potential growth of the program was predictable. The

director of Military Construction was responsible for the program even though, as I recall, the funds were managed through the Civil Works accounts.

On 1 July 1976 the headquarters moved out there as a new division, the Middle East Division. Colonel Gray remained as district engineer of the Riyadh District, and Brigadier General Dick Wells became the first division engineer. He was selected because of his solid, thorough, deliberate, and correct decision-making process—characteristics we needed for a new office during a turbulent period. Gray stayed a short while, returned to the States, and ultimately retired. Wells built up the Middle East Division and got it off to a good start.

Q: Was it important to have a general officer there?

A: It was critical to have a general officer there. It was the biggest program we had. The Saudis are quite sensitive to having top people. Also, making it a division in itself was important, but we must remember that the Saudi program probably was as large as the rest of the military construction program, and it was a long way from home. We also set up a division rear out at Winchester. A general was appropriate.

Q: Why was Winchester chosen?

A: Well, it was not accidental. The chosen site, not where they are now but where they went originally, was secure and had good communications once Bob Blakeley set up a satellite communications network to Riyadh directly from Winchester.

It was far enough away from Washington to protect the activities from what I would consider unnecessary visits and queries, et cetera. Several sites closer to D.C. were considered but none was as suitable.

As time went on, and almost immediately after I moved up to be Chief of Engineers, I met with the officer in charge of the Saudi military construction program, Prince Nasir Faisal. He was a major, very sharp, and I thought, excellent. During an early meeting I mentioned that while the program was big then, it would not stay big forever. I wanted the Corps to finish its work with pride and dignity, and I would like to try to predetermine a date for coming home if possible.

So I asked him if he would give us a flight path into the future, which he was unable to do. However, by asking that question when we did I think it alerted the Saudis to the fact that somewhere out there there would be a phase-down and that should be handled properly. Of course, that was a low-priority item at the time because we were so busy doing the job.

A couple of other things came up in the Saudi program. Our charter and our responsibility were to the Ministry of Defense and Aviation, and also to the National Guard. The ministers over there were possessive about people who worked for them. I offered to do a study of their water resources nationally, similar to what we've done in several regions here in the States. It was a very attractive offer, but we could never get the authority to deal with a ministry other than the Ministry of Defense and Aviation for reasons I don't understand. The Corps could have done it nicely.

So we concentrated on the Ministry of Defense and Aviation, and out of that program came some truly magnificent projects—no question about it. The headquarters of the National Guard is a monumental building, cost a couple of hundred million dollars. It was designed by Leo Daly and built by DiMathis, an American company with the Korean, Sam Whan, as a partner. It is a beautiful building. We had some problems with it, of course; you always do. Then we built the headquarters for the Ministry of Defense and Aviation itself, which is another monumental building, the headquarters for the Air Force, headquarters for the Navy,

all in Riyadh. I guess the first project we did there was the communication setup for Voice of America, but I was not involved.

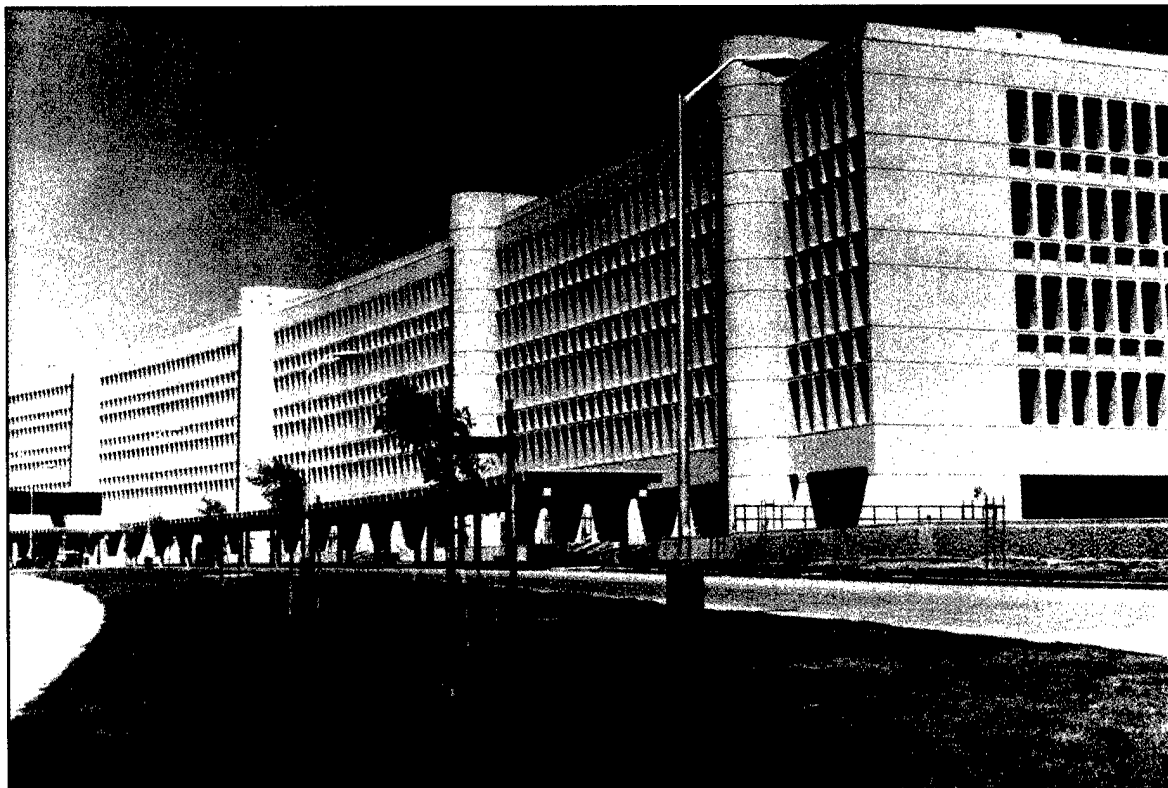
Then there was quite a bit of work in the west, Khamis Mushayt, Tabuk, and Jidda. Jidda District was formed, leaving the eastern area to Riyadh District. Later we set up the Al Batin District in King Khalid Military City. The latter alone was a multi-billion dollar, 70,000-person city, built in the middle of the desert. We did work for the Navy at Jubail and actually built a port nearby at Ras al Mashad to service the work at Al Batin. So it was a magnificent program, and the Corps carried the American engineering and construction industry with it to Saudi Arabia.

Also, in the early stages American manufacturers were blessed because the work required furniture, fixtures, and facilities that were ordered by Winchester from U.S. suppliers.

Now, as with any program of that size, there were difficulties. The difficulties, in hindsight, were primarily with executing the construction, not the program. The only programmatic adjustment we ran into was with the National Guard. Prince Abdullah, who's now the crown prince, was then the head of the National Guard Bureau. While we did a lot of good work for him, the National Guard began to manage its own contracting and did not use the Corps after the first couple of years. I am not aware of any dissatisfaction other than they thought we were expensive.

Q: The internal politics of the Saudi government, royal family, is a pretty complex environment in which to work, isn't it?

A: Yes. Yes. The Ministry of Defense and Aviation was under Prince Sultan, still is, and he stayed up-to-date on the program. His staff included Prince Nasir Faisal, whom I mentioned, and other people in his ministry. This group and the Corps established clear procedures, so



National Guard Headquarters Building in Saudi Arabia, part of the massive Corps of Engineers' managed construction program for the Saudi Arabian armed forces.

it worked out well. That was one of the advantages of only working with one ministry. You had only to understand one ministry, as opposed to trying to figure out two or three.

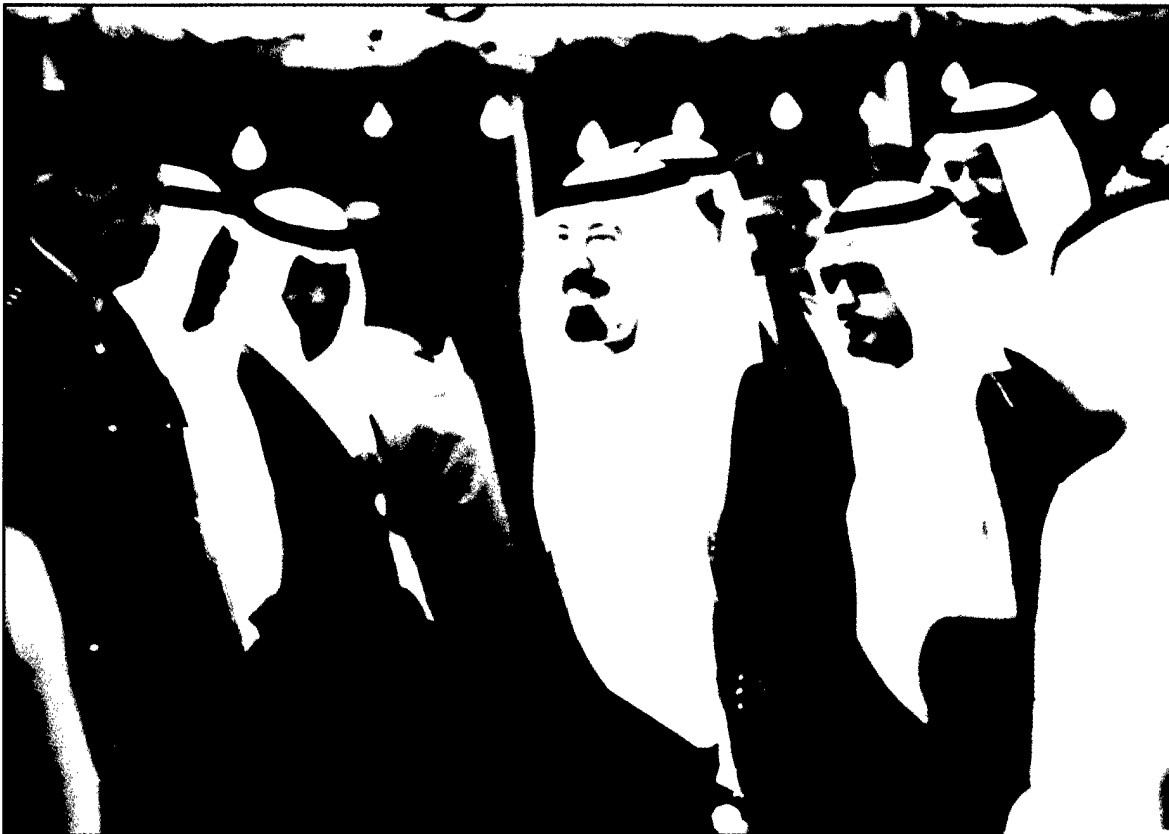
King Khalid showed up at major events like the dedication of the National Guard Headquarters. At Al Batin, we built a guest home for him which he used once or twice.

It's too bad, in a way, that the American industry lost its preeminence in this program as other governments began to subsidize their construction industry. I think I've covered that already.

Q: Did you go over several times?

A: Yes. I was in and out of there several times a year. I happened to be in Saudi Arabia the night that the Camp David agreement was to be signed. Gerry and I were guests of Governor [John C.] West, the American ambassador to Saudi Arabia. That evening he was called away from our dinner party. Later I learned he had received instructions to tell the King that the agreement had been signed. There was not a great deal of enthusiasm in Saudi Arabia for the Camp David agreement, as I recall.

The next day I was in Egypt to do some work with the Suez Canal authorities and I was the guest of Chairman Mashour at his headquarters in Ismailia. The Egyptians were delighted with the Camp David agreement. There were parades and Mashour had to leave us also, but he went to celebrate. While we were there, somebody asked what the Corps was going to do about those two airfields, which leads us into the Israeli airfield project, although you haven't asked about it. Along with the Saudi program, this became a major effort of the Corps. Believe it or not, I didn't know anything about the two airfields when I was asked this question. I replied, "What airfields?" So I learned, sketchily, that the Corps was to replicate



General Morris participated when King Khalid of Saudi Arabia dedicated the National Guard headquarters building.

in Israel a couple of fields that were in the Sinai before that area was returned to the Egyptians.

Well, by the time I got home, General Burnell, the deputy, had gotten things well organized. He'd sent some people to Israeli already.

So that was the beginning of the Israeli job, the airfield job, which turned out, in my judgment, to be the most difficult single project during my term in the Corps. Before I leave Saudi, we should discuss a few lessons learned from the standpoint of contract management.

The Saudis would, of course, determine the program and they would approve the design. We had no objection if they suggested contractors who might bid on a job, but the Corps definitely objected to any influence being exerted by the Saudis on who was to be selected to do the job. Until very late in the program, that was never an issue. The Saudis respected that and we didn't have any problem.

When the King Khalid Military City came along, we had to select a contractor to build the infrastructure—the roads, the water system, quarries, et cetera—and then to operate and maintain those for the major contractors who were to build the facilities. The infrastructure contract was highly competitive and very expensive for the bidders to prepare proposals. After several iterations, meetings, and reviews, we derived a short list of contractors whom we wanted to go to the next go-round.

At the last review there were two critical issues: one was how to organize and manage the job and two was how to handle the materials going to the job site. The second point proved quite simple. The freight forwarder, whoever moved the materials from the United States to the project, would be responsible from the time they were picked up in the States until the time they were turned over to the using contractor at the job site. That meant through all the ports and in and out of the customs and then reshipped in Saudi from water to land, et cetera. That was a tough requirement for the freight forwarders. That allowed us to deal with the contractor because his risks were defined a little more clearly than if he had to pick materials up at the port.

The next question, though, was management. We wanted to be sure that the contractor had proven experience in managing complex projects. We had some excellent competition. We were just about to make the final decision when we got a call from the Saudis saying they wanted a certain U.S. firm to be allowed to bid on the job.

I objected to being told to give favored consideration at that late date and that it was a violation of our understanding that the Saudis would not try to influence the selection process. The fact is, I felt so strongly about it that I mentioned to the Defense Department that if the Saudis insisted on forcing this issue, that I would suggest that they find another agency to handle the Saudi program. The ship had already left the port, for all practical purposes, and there was no way to get this new firm into the system in any reasonable way. As it turned out, the president of the company came to Washington. I briefed him on the whole situation. I noted that there really was no way to get a new bidder at that point in time and still be fair. Actually I would have been happy if the timing were different. He agreed and asked that his company be withdrawn from consideration. That was the end of the problem.

The contract went to Morrison Knudsen for about \$800 million. I may have mentioned earlier, when the time came up two years later for renewal, Morrison Knudsen indicated they did not want to bid it. They felt they'd lost money. I asked them to bid since they were already there. They did. Sam Whan came along with a bid that was significantly less. Sam Whan is still

there, as far as I know. So it was another example of what I've already discussed, where American firms lost out. I really do think Mr. Bill McMurren, the president of Morrison Knudsen, put in an honest bid—that is the amount he thought they'd need to be successful.

In contrast, when the Corps finished there were claims. Contrary to awarding a contract, I thought the Saudis should participate in the discussions relating to claims. Payment was often held up because of their questions, and if they participated in the negotiations to settle these claims, the chances are they'd be settled without delaying questions.

While we didn't want the Saudis involved prior to the contracts being awarded, I felt they should be involved in the close-out claims situation.

When we first got into the Saudi program, there were some morale and personnel problems. Ultimately we moved over a thousand people out there. Initially, our people were living in homes that had been procured from the market throughout the city. Don't misunderstand me, they were very nice homes, but they were scattered all over Riyadh. Our women couldn't drive, and transportation was difficult because the road nets weren't finished. It was just very inefficient and somewhat unpleasant for all, especially the women.

So we asked the Saudi officials to allow and finance us to build housing areas for our own people. That was done to include recreation facilities. The housing areas were to have better-than-average facilities for family—entertainment, playgrounds, tennis courts, et cetera. We may have been a bit extravagant, but I have no apologies. It was the right thing to do.

We built a nice area for the senior people called "The Wadi" including a larger home for the division engineer. The division engineer needed a little more space. He had some entertaining to do, and the houses weren't all that large anyhow. Besides, the Saudis expected the senior people to be better cared for—that was their style.

Morale problems lessened at once, and most people who went to Saudi loved it. They were often hesitant to go, but once they got there they loved it. I remember when we sent [Major] General [James N.] Ellis, whom I'd yanked around a couple of times earlier in his career. Mrs. Ellis did not want to go, but after she got out there she loved it. Really. The same thing happened, to some extent, with [Major] General [George] Robertson. He and his wife were happy too.

I look back on the Saudi program as a severe test of the Corps' managerial talents and capabilities. It was a successful program. Some people may say we should have stayed longer. Still, our goal was to export our talents and teach the Saudis how to do their own management—and they've done that.

Q: I wanted to ask you about that. There was an emphasis on training the Saudis.

A: Yes, absolutely. We never made any bones of the fact that we were going to be there as long as they needed us, but our intent was to come home. When we came home, to leave behind a capability that could fill in behind what we were doing. You always hate to give up a nice program, but when we'd finished our mission the Corps came home in good shape. Fact is, they had a ceremony to recognize the work. Along with General Clarke and selected key people, I was invited in 1988 or '89 to a very nice Corps' recognition affair in Riyadh and at King Khalid Military City. I've been back to Saudi several times since I retired and the Corps remains well liked. They'll never bring the Corps back in to do what we did before, nor should they, but they still call on the Corps for advice and help.

The only other incident in the Saudi program that I can think of was when Under Secretary of Defense [William] Clements thought the senior U.S. officer in Saudi Arabia, the Air Force

commanding general of the U.S. military mission, should be in charge of everything in that country involving U.S. personnel.

Having just departed Saudi Arabia, I was up in Brussels visiting General Haig's headquarters. Also, I had a very bad cold, but on learning of Secretary Clements' interest, I decided we had to get back to Riyadh. We were able to get a helicopter from NATO [North Atlantic Treaty Organization] to go to Orly, and fly from there into Saudi Arabia. Lieutenant Colonel Jack Clifton was with me. We had some difficulties because of weather, but all that worked out and I got back to Saudi at 0600 and went right to this meeting. At the end of his visit Secretary Clements decided not to make that change.

While in country, Secretary Clements dedicated some facilities for the National Guard and I was able to spend time with him. It was during that period of association and discussions that I think he decided not to make a change. That was a near thing because, while we would not have lost the mission, we could have lost control.

We had another little event which maybe shouldn't go in here but it was important and humorous in a way. General Haig had been replaced by General Rogers at SHAPE [Supreme Headquarters, Allied Powers, Europe]. In Saudi, of course, you're not supposed to drink alcoholic beverages. There was an arrangement made with the Saudi government which was well recognized and well managed allowing the Corps to import alcoholic beverages and distribute them within the U.S. compounds with the understanding that the whiskey would not go outside the compound and that we'd remove labels and break the bottles.

When the sergeant major of the U.S. military mission was replaced, he told his successor, "One of your most important duties is to handle the Class VI distribution." Well, the new sergeant major didn't keep that as close hold as he should have and the word got back to General Rogers. Rogers said, "Quit sending whiskey into Saudi Arabia." That decision threatened to be a big morale problem as you can imagine.

Fortunately, we had enough supply on hand that we could stop temporarily. Finally, I called General Rogers on the phone and explained to him the impact of his decision. So he finally said, "It's your problem. Solve it, but I don't ever want to hear about it again."

So there were two close calls in things that affected our program. We successfully survived Mr. Clements' initial ideas and also kept our spirits.

Q: It's interesting, the story you said about the Corps' getting out of Saudi Arabia. I interviewed General Bill Wray in 1987, and his objective, he said, and he was there at the close-out, was to get the Corps out, to get it out with its dignity.

A: Well, that was the policy.

Q: And to leave.

A: I'll tell you how that came about. Another good friend of mine, General Parfitt, had been governor of the Panama Canal, and when the decision was made by President Carter to relinquish the canal, the position of the governor and the canal company was immediately impacted. I felt that the Corps had been summarily dismissed from Panama. Although General Parfitt did a magnificent job in closing out his operation, we didn't want a similar event to happen again in Saudi Arabia. So we did start, years ahead, to plan a proper departure with the flags flying, morale high, and a fond farewell.

I'm glad to hear Bill Wray felt that way because he was a significant player in the whole Saudi situation. He deserves a great deal of credit for many other things including closing our offices when he moved to Europe as top man.

Q: That brings one follow-up question on this I wanted to ask. When the Mediterranean Division moved to the Middle East, it left the work in Europe in the hands of the Europe Division, EUD, which was a fairly new organization.

A: Yes.

Q: Did you have any reservations about that?

A: No. The Saudi Arabia matter was paramount. Med Division was busy in Sicily. About that same time an agreement was made for the Navy to take over the perimeter of the Mediterranean to a certain distance east, and Admiral Islen's people moved in behind the Corps in Sicily and lower Italy under this new agreement. The Army effort, which went from Med to Frankfurt, wasn't as big as you might otherwise have thought.

While the Europe Division, as such, was relatively new, we need to remember that an engineer command under Generals Koisch and LeTellier existed before EUD. I don't recall having any hesitancy about that. Anyway, that's what we did and it worked. That's the key thing.

We've spent a lot of time on Saudi Arabia.

Q: You talked about the discussions of the American military command arrangements in Saudi Arabia. I wondered if that had come up, the whole idea of putting the Corps' effort under the American armed forces commander over there. It would be sort of logical that that idea would come up, I guess.

A: Well, it does. First, he was the senior man. Actually the access to the United States government through the military mission was cleaner than in our assistance agreement. It was an idea that seemed to have some promise, but the timing would have been serious. Anyhow, Secretary Clements decided not to do it and I was happy. Also, about this time was another somewhat unfortunate decision here at home. Our Congress included the engineer assistance agreement work as part of the foreign military sales effort. That meant that Congress got in the act on all the work that was done under the engineer assistance agreement.

Q: Turning to the other big international program when you were Chief, the Israeli air base program.

A: Well, as I said, that's the toughest specific challenge we had. Many complex factors made it tough. When this whole project started, I suggested or decided that we'd send a public affairs person to Israel to be on the ground during this whole process. As a result of that, a book has been written. I don't remember the title [*Building Air Bases in the Negev*], but a Corps' historian [Frank N. Schubert] wrote it so you can find it. The book's okay; however, it was based on a perspective below the Chief of Engineers' level; therefore, some assumptions or conclusions were off target when drawn about my thinking and decisions, but I don't think I should belabor that point. The book is a worthwhile read.

The key problems with the Israeli project were:

First, there was a fixed deadline to make the airfields operational or the Israeli air force would be grounded.

Second, there was less money appropriated by the Congress than needed, so the Israelis had to provide the last \$240 million. This meant that every dollar saved up to that amount was their money.

Third, there was no logistics or base upon which to build and there was no labor market to draw upon.

Fourth, we needed a cost-plus type of contract because there were so many uncertainties.

If there was a fifth, it would be that the plans for the existing airfields in the Sinai, which we were to replicate, were in Hebrew and the as-builts were very incomplete.

So there we were. We didn't have any design, we didn't have a logistics base, we didn't have a labor base, we had a very tight deadline, the money was short, and so on.

As I mentioned, General Burnell had begun to gather critical data by sending a team to Israel to evaluate the situation. There were, however, several key and basic decisions to be made. One was the money. First off, the Congress of the United States did not act immediately on the Camp David agreement. In other words, it was three or four months before they appropriated the money to execute the program. We really couldn't afford to lose three or four months in our planning. Then, we had another problem. Air bases were an Air Force-type program, but the Corps was going to do all the work. I was convinced the Corps needed the money, and we took the position from the outset that we had to control the money. The Air Force insisted it was their program and they wanted the money in their budget. This grew into a very interesting and crucial issue.

To me, it was a critical problem. If we didn't have the money, we would not have the control we needed to do the job. Well, the thing finally got up to the Secretary of Defense's office. Mrs. Shay was Assistant Secretary of the Air Force, as I recall. She was the senior person from the Air Force present at a meeting. She appeared with her group. I was alone. Mr. McGiffert was the Assistant Secretary of Defense who dealt with this project. I'd known McGiffert when he was the Under Secretary of the Army. As soon as the meeting started, I think he realized that I was very serious about solving the money matter correctly. Fortunately, General Graves, who had been my deputy in the Corps, had become McGiffert's military adviser. As we all know, General Graves is very perceptive.

After considerable discussion, Mr. McGiffert indicated he didn't want to have to solve this problem by a directive and for the Air Force and the Army to come to some understanding. So Graves put a proposition on the table that the money would be put into the Air Force budget with the proviso that it would be passed through without change directly to the Chief of Engineers. That's what we did.

So that was the first, I think, fundamental decision that had to be made. That was not an easy decision but DOD got that right.

The next decision related to the kind of contract we needed. As it turned out, the Military Programs staff devised a completely new type of contract, the only one of the type we've ever had and may never have again. A consortium was to be formed wherein the construction contractor would be the principal, but he would have to put on his team a well-known, highly respected design engineer firm. We had to do a fast-track job by designing as we went along. These aspects, plus many other uncertainties, dictated a cost-plus contract. We just couldn't identify all the risks, particularly since we didn't have the plans and specifications. Still, we

had to start work if we were going to get this thing done on time. By the time Congress got its money straight, we had less than three years to do a five-year job.

We looked around the Corps for people who had cost-plus experience and we found three people. There must have been more out there but we could only find three, and I happened to be one. I must say here I really gave thanks for Fred McNeely—a rock in this project. Those who have dealt with cost-plus know that it's a complete flip on the normal fixed-price contracting officer and contractor responsibilities. Instead of the contractor being responsible for doing the job within a fixed price, under a cost-plus job the owner becomes responsible for managing the contract to be sure that the costs stay in line. Cost-plus requires stronger control.

Then we had to select a contractor for each airfield. We couldn't use a contractor that was working in Saudi Arabia. We ended up using Guy F. Atchinson and Perini. We were extremely fortunate to have two such outstanding contractors. We actually started work almost on a handshake because we couldn't definitize the contract till we knew more about the details.

We finally got the contract definitized in January 1980 or about eight months after we started work. In the meantime, the two contractors spent well over \$100 million and I don't think they spilled a dime. I really was impressed by their patriotic, All-American, get-the-job-done spirit and their reliance on the Corps to treat them fairly.

On 14 July 1979 we dedicated New Melones Dam. Guy Atchinson built it. I attended the dedication with Joe McNabb, president. Joe came up and said, "Jack, this thing's not going to work." I thought he was talking about New Melones Dam. He was talking about the Israeli airfields. I said, "Why?" He said, "Well, I can't get any answers." I asked him to provide the questions. I took 14 questions back to Washington on Saturday. On Tuesday morning I called and we gave him all the answers. He said, "Well, I guess we can get the job done if we get that kind of service." That reinforced the need to have excellent control and management and led to another key issue—how to manage this job.

I mentioned earlier the goals and policy to keep the Corps headquarters out of the operations business. I thought the headquarters had plenty to do in the policy and the programming arrangement. Based in part on my own experiences in Labrador, we selected North Atlantic Division as the operating division. Their job was to get the job staffed, manned, get the materials rolling, get the contracts set up, et cetera, et cetera. My intent was that whenever the center of gravity of the work moved to the field, in other words when the contract was awarded and we had the staff in place and everything was working, then we would remove North Atlantic Division by setting up a small-division type of operation under a general officer stationed in Israel. In the meantime, I was satisfied a colonel would be satisfactory, especially since he was under Major General Jimmy Johnson, the division engineer, North Atlantic Division. When General Johnson came down to be deputy, Major General Ben Lewis took over. There was considerable discussion later as to whether I should have sent a brigadier general at the outset directly to Israel.

Ben Lewis did an outstanding job definitizing the contract. I don't think anyone else could have done as well. He ran the project with firm control out of New York, which caused a certain amount of tension at the other end. Sometime in the spring of 1980 Bill Wray, General Wray, came to me by memo saying, in effect, "We've got to do something about the organization. We ought to put a general out there." I said, "Well, if you do, we're going to take North Atlantic Division out of the net, and I don't want to do it until we are sure it won't be an operational burden on OCE." He indicated, "We'd better do it." So we picked out John

Wall, who'd just made the brigadier general list. John was in school getting a doctorate in law and not available until late May. He was exactly the right man. I had known John in many earlier jobs and there was no one else I really wanted to send. So we sent him. He arrived in June.

We then began to extract North Atlantic Division. That created a certain amount of tension, too. General Lewis didn't want to give up the job, but the time had come to do it. Even so, we didn't take him out of the net until September. I had to give Wall time to get his feet on the ground. I was supposed to retire on 30 June 1980, but because of this project General Meyer, Chief of Staff, allowed me to stay on until the end of September. So I went there in August to be satisfied Wall and his people were ready. The book mentioned earlier has quite a bit of discussion about that whole scenario of the general going to Israel and taking Lewis out of the net and so forth. My actions were simple and predictable. I followed the original goal of keeping the Chief's office out of the operations business. We could swallow up 40 or 50 people just running a job, at the expense of policy and programs. It worked.

We sent the best people out there. I found three of the Corps' best colonels—Don O'Shei, Jack Gilkey, and Dick Curl—and they were the first three colonels assigned. Jimmy Johnson was given the choice of each of those for the projects and for running the office. He chose Gilkey to run the office, and he put O'Shei and Curl in the projects—good decisions that fit the persons involved.

In executing the job, it took a while for things to settle down. The labor market problem became significant. Perini used Thais, who proved to be great equipment people, but their upper body strength was low, so they didn't do as good a job on roofing and heavy lifting things. Perini, I believe, had to have three or four different mess halls because of the different types of food. The other contractor used the Portuguese and they were infiltrated with some Communists. They went on strike, which had to be straightened out.

In the end, the Corps built two beautiful airfields. I, of course, had retired in the meantime. It's a real credit to the Corps and the personnel in the Corps that they were able to get that job off and running and finished ahead of time and that the budget process worked well. I think it ended up costing \$1.24 billion, instead of \$1.2 billion. We had a \$40 million overrun. The fact is the Israelis got all the equipment at the end of the job. I believe they got their \$240 million back in other ways. There were changes to the job also. Quality control was tough, cost accounting was difficult, as was scheduling of the work because of the design issue. All of those things and many more created a host of problems and difficulties at the project level.

Q: You mentioned logistics was a problem.

A: Ben Lewis told me early on in his term that the big bugaboo was going to be procurement. He was right. Procurement was the crunch item.

Personnel was a problem, too, in a way. The Corps did not have a team in place to send out to do the job, so we made some ground rules initially. One, we were only going to send about 100 Americans. Everybody in the Corps was busy when this job came along. We didn't have people sitting around doing nothing. So the idea was we'd send a limited number of key Corps personnel and hire a construction management firm to supplement this staff. Lester B. Knight became part of our office. The number of Corps employees was set simply because we wanted to keep down the number of people we took out of the system and also we thought we could find 100 key people who were well qualified.

They had never worked together. Many knew each other, but they'd never worked as a team. The rules of the road were different. So getting the office organized was a tough job. Jack Gilkey had the task. The two outsiders, the U.S. Air Force and the Israelis, became very impatient. They wanted a lot of things to happen more quickly than was the case.

In hindsight, I don't think we protected Gilkey enough. Gilkey was a colonel; the counterparts were brigadier generals. His flank was overexposed. Instead of being able to concentrate entirely on getting his office organized, he had to deal daily with these externalities. As a consequence, I sent Brigadier General Max Noah from Huntsville to set up the management information systems and to help Jack. Max did his job. The contention was that if we'd had a general out there to deal with those other generals, it would have made all the difference in the world. I don't think it would have made much difference because the initial distractions for the project manager would not have changed. I admire Gilkey for his performance, perseverance, and objectivity.

Start-up was a major problem. Then General Lewis had problems with some of the Corps individuals and he wanted me to replace them. I finally had to tell Ben, "I don't know where we're going to get better people. We've sent the best we had. Unless there's some disciplinary problem, our best bet is to train those into a team rather than sending new people out." I went to Israel in January 1980 and told our people that I would be back in August and left four or five things to be done. Many were nervous about losing their jobs so I announced to the groups that, "absent some difficulty with the Israeli government or some disciplinary problem, you're the people who are going to get this job done." Afterwards, our people settled down.

I went back in August. John Wall was there by this time, and the management information systems were beginning to work.

To emphasize Jack Gilkey's problem, I found that every time I went to Israel I had trouble with the Air Force and the Israeli generals assigned to the project. They kept hammering on all the things that were too slow or going wrong with the Corps' operation. They were tough and I rarely had a chance to say anything. One day we were supposed to go see the Minister of Defense, Mr. Ezer Weizmann. After lecturing me for about 30 to 40 minutes, the Israeli brigadier general indicated we had to leave. I asked where we were going. They indicated we were going to go see the Minister of Defense. I said, "Hold it. Since I haven't had a chance to say anything, I am sure we are going to be a little late."

When we got over to the minister's office I raised the relationship problem. I said, in effect, that he had bought a Chevrolet and now we were going down the road about 50 miles an hour and somebody decided he wanted a Ford. If you want to stop long enough to let me off, it's okay, but if we're going to continue we'd better figure out how to work together.

Mr. Weizmann acknowledged the Israelis could not do this job. He said words to the effect that he didn't think anybody in the world could do it except the Army Corps of Engineers. That's what he had asked for, that's what he got and was going to keep them. He gave the Corps a big pep talk, and that was the end of that. So when it's all said and done, the Israeli airfield job was, I think, a great challenge to all the key people involved. Everybody had to work hard, and they did and I include all the players—U.S. Air Force, Israelis, Corps of Engineers, and contractor personnel. The level of concentration and loyalty of the Corps' group in Israel sets a standard, in my judgment. In spite of all the pressures, all the difficulties, they put this job together; and they got it done on time, generally within the budget, and with

high-class quality. That was under great pressure, not only externally but internally. So you have to admire the results, and then you have to compliment the people that got us there.

There was no adverse publicity. You didn't read adverse comments about this job in *Engineering News Record* or in the *Wall Street Journal*. Most jobs of this nature attract public attention. This one didn't. So I'm pleased with the way the Israeli airfield job came out. I am especially gratified to General Bill Wray, Fred McNeely, and Lee Garrett of his office for their excellent management of the entire project.

Q: One follow-up question related to this and having to do with the cost-plus contract. In the Corps' past there had been some very bad publicity associated with cost-plus contracts, so that was an additional pressure on the organization.

A: Yes. The circumstances that normally lead to using cost-plus usually generate problems. The reason you go with cost-plus is because of uncertainties. You want the government to protect itself rather than have the contractor put into his bid exorbitant amounts of money to cover the known risks and some he can't foresee. So in and of itself, a cost-plus contract has controversial characteristics and uncertainties, but there's definitely a place for it. My philosophy is that the best answer is fixed-price. If you find there are enough uncertainties or other specific reasons to warrant a different type of contract, whether it's cost-plus or fixed-price with incentive or whatever, then you adopt a deviation from the standard justified by specific situations.

Q: Let's begin this morning by talking about the MX program that appeared on the horizon during the Carter Administration.

A: The MX was an on-again, off-again program because of discussions about whether it would be built on a track that ran across a large part of a country, a mobile system, or whether we had multiple mini-sites, the mini-MX program. The Corps' role would have been to supervise the construction of whichever plan was finally adopted. A large area of the Southwest had been identified for the mobile train, and our greatest efforts were oriented towards organizing to do that job.

We used the lessons learned from the original ballistic missile program which was placed under an existing division. Soon the new missile program was taking so much attention that the division couldn't execute its basic program efficiently. In that instance, the Corps decided to set up the Corps of Engineers Ballistic Missile Command. Some slippage resulted as a result of the change in the organization and management.

We didn't want to repeat that situation. On the other hand, to get started, we needed to put the organization and management and a certain amount of the startup under one of our divisions. The South Pacific Division was chosen with the Los Angeles District as the primary management office. That's also the way the ballistic missile program started. In this case, however, the start-up plan for executing the MX program was to describe the circumstances which, when fulfilled, would indicate that the time had arrived to set up a separate command.

We didn't want the change-over to happen as a result of deficiency in performance. Rather, we wanted to have a preprogrammed plan to initiate the new MX construction command and relieve the division. From the outset, the South Pacific Division knew that it was not going to build all the MX requirements.

General Delbridge, division engineer in San Francisco at that time, was personally directed to develop such a plan for handling the MX program.

When I retired, the MX program had not materialized. There was a great deal of attention given to it, both in the Congress and in the Executive Branch of the U.S. government, which included the Corps, of course. Ultimately, it was canned and now it will probably never be built. Still, the Corps was well placed, if it had happened.

You know, the military program was fragmented over a large number of military installations throughout the world. Consequently, individual projects often were not sufficiently substantial to warrant particular discussion here. Exceptions would include the Israeli airfield work and portions of the Saudi program—also, programs such as housing, military training facilities, special warehouses, and shop facilities. The projects within the programs were usually distributed over two, three, a dozen, or three or four dozen installations.

Some programs stand out in my recollection, for example, the hospital programs. Every hospital was tough, so a special management group involving medical and Corps people was established. Hospital construction was a major management challenge within the Corps.

Q: Most of these were renovations rather than new constructions?

A: There were some of both—a new one in Colorado, a rebuild in Hawaii. Fort Campbell got a new hospital. There were several new hospitals. I don't remember all of them now, but then, as you say, there were a lot of rehabilitations. Walter Reed was the predecessor of most of the ones I'm thinking about, and we learned enough at Walter Reed to help us with the rest of them.

The postal program was winding down. The point I'd like to leave on the military is—it's not that there wasn't a large program, it's not that there wasn't a lot to do, it's not that it didn't take a lot of management—it's just that with specific exceptions, the program at any one location did not provide multimillion-dollar structures.

Q: Wasn't there a particular problem with facilities in Europe?

A: There are two parts to this subject. One is the facilities engineer business itself. General Bachus, as I think I've already mentioned, became the director of Facilities Engineering in the Chief of Engineers' office in a move by General Gribble to elevate the importance of providing and maintaining our soldiers' facilities.

In conjunction with that, we started the one-stop shopping concept mentioned earlier, where any district could support any commander who called up and asked for help. That added a lot of momentum. We did reduce the backlog of maintenance repair here in the United States.

A singular issue was the European housing facilities for our soldiers. General Cooper was deputy commanding general, U.S. Army, Europe. He became particularly concerned about the housing situation for soldiers and proceeded to focus attention from both the command and engineering approaches. This issue arose while I was deputy chief as indicated previously, so a program was devised to upgrade the facilities for our soldiers, not only the living facilities, but the functional facilities—in Germany especially.

Once the Congress became aware and started the funding, there were significant improvements. It was a big program which our Europe Division managed. There, again, it was fragmented. There's no single place that stands out like an Israeli airfield or the Saudi program, but as a program it was especially important and valuable.

One other item in the military area is engineer equipment. As a second lieutenant in World War II, I used a D-handle shovel and a D-7 tractor. I noticed the second lieutenants in 1976 still had a D-handle shovel and D-7 tractor while modern sophisticated equipment served the

rest of the Army. The Army engineer consequently did not have the mobility to keep up with the troops he was expected to support.

The entire time I was the deputy chief, we had an ongoing effort to get the UET, the universal engineer tractor. Then it was the ACE [M-9 ACE, armored combat earthmover]. That's what it finally came out to be, I believe.

As Chief of Engineers, I only had staff input, so the real momentum resided in the commands, the Army commands, not with the Chief of Engineers. The Chief of Engineers' office played a principal role in getting the top leadership of the Army to recognize this deficiency and ultimately have it satisfied.

Later General Kem, while CG at Fort Belvoir, advocated and got the E-Force moving. Now we have an engineer brigade instead of a battalion in the infantry division. That was an important move. General Kem deserves credit for his leadership.

Then there was the problem of mine detection. Having been in Vietnam, no one was satisfied that we had a good way to clear a minefield. The old-fashioned method was good, but it was just so slow and risky. So we were always looking for new methods. We had the flailer, an attachment to a tank. Not a bad idea, but it had to work hard to get the job done.

That problem really has not been totally solved to date. In the matter of combat equipment, I think mine detection and minefield breaching has to remain a front-burner item, particularly since, as we learned in DESERT STORM, mobility is so important. Breaching minefields remains a vital tactic and a major command concern.

I remember going out to the Engineer Topographic Laboratory with General Rogers, the Chief of Staff, and being given a demonstration on how the Pershing could identify on ground what had been programmed into its guidance system, and we were trying to develop water purification and treatment facilities so we could have small amounts of water quickly for the individual soldiers and larger amounts for large units.

So the whole set of combat engineer equipment being upgraded should always be a continuing effort because times and requirements change. In my day, it was mostly the ACE and the minefield equipment.

Q: Bridging equipment probably was one.

A: Bridge equipment, of course.

Chief of Engineers: Civil Works Projects

Q: We've discussed a lot of the military projects when you were Chief. Let's turn and discuss the civil works projects and issues while you were Chief.

A: Before we go to specific projects, we might set the stage a little bit by reviewing the national issues that impacted on the public works projects.

There really were a couple. One was the environmental program, and the other was the programmatic effect of having filled so much of the nation's water resource management needs. So we had this national movement legislated in NEPA, superimposed on a program which was declining in any case.

I've written and made so many speeches about how we got into the environmental priorities during the 1970s that I really don't feel that we need to repeat them in detail now. There's no



General Bernard Rogers, a classmate of General Morris at West Point, visited the Engineer Topographic Laboratory when he was Supreme Allied Commander, Europe. General Rogers is second from the right and General Morris is third from the right.

question that as our country grew, used more and imposed greater burdens on our natural resources, we would have to take stock of that growth and our development attitude.

The evaluation was precipitated, at least accelerated, by the environmental movement. The environmentalists who raised the question of the destruction of our resources and the ensuing long-term effects precipitated a change in our nation's policy. NEPA and subsequently Section 404 of the Clean Water Act amendments are evidence of their influence.

Section 404 put the Corps of Engineers in an ambivalent position. On one hand, there was a great pressure on the Corps to operate its business in accordance with the new policies, and that put numerous projects under close scrutiny. On the other hand, the Corps of Engineers was placed in the position of having to monitor and approve development by others in navigable streams and wetlands.

Those same rules gave project opponents a basis to challenge the method of satisfying them. Of course, everybody knows the lawsuits and all the stories about the snail darter, the Indiana gray bat, the striped bass, the eagle, the black-footed ferret, the peregrine falcon, et cetera.

One reaction to the constraints on construction was to find nonstructural solutions to various problems. As already covered, the Corps became the frontrunner. As early as 1971 we began to discuss ways to solve the drainage downstream from Chatfield Lake through the small residential community of Littleton, Colorado. Ultimately, legislation was adopted to use open land as a nonstructural solution to this drainage problem.

Soon general legislation was passed—Section 22, as I recall, of the Flood Control Act of 1974. One of the better projects was Indian Bend Wash, which maybe we'll talk about later. It's in Scottsdale, Arizona.

So when you talk about projects in the public works area and even in the military arena in the 1970s, you really have to place them against the backdrop of the environmental and regulatory programs in effect at that time.

The major programs that had been put into place by the Bureau of Reclamation, the Corps of Engineers, and to some extent, the Department of the Agriculture, but primarily by the Corps of Engineers in the 50 years leading up to 1970, had resolved a high percentage of the major objectives in developing American water resources. By 1975 only a few dams for hydropower were under construction. Flood control was fairly well in place as was the transportation system.

So a good question was, "What's left to do?" Especially in view of the environment and the other constraints. Should the Corps change its basic orientation in the public works arena from major construction, water resource development, to some other activity? To better answer that question we analyzed each function for which the Corps had a major role—hydropower, navigation, water transportation, flood control, water supply—to identify the need throughout the country.

Congress authorized us to make two studies—the national hydropower study and the national waterways study. The waterways study had begun while I was still director of Civil Works. I also had hoped to have a similar study made on the national water supply system.

The standard in those days was that the beneficiary of a project should pay. For example, water supply became a local responsibility as did local flood protection. As a result, the water supply study was not undertaken at the federal level. The hydropower study involved both high-head and low-head dams and small projects.

One year General McGinnis, as director of Civil Works, and I went to New Hampshire to inspect a project. We drove by a mill on a small river and noticed that there was some kind of small electrical facility there. We stopped by, and sure enough, the owner of this old fabric mill had installed a small turbine on a low-head dam. It was making enough electricity to run his plant. We both wondered how much more of this was going on around the country. Low-head power was getting to be a subject of great discussion.

Earlier, the Corps had installed an inclined turbine at Webbers Falls on the Arkansas River project. We felt that if we could get a horizontal turbine [run of the river] in the Mississippi below Lock and Dam 27 we could generate considerable energy.

In spite of engineering problems, there was big interest in low-head dams. So the director of Civil Works and I decided to have a conference on this subject in Washington in 1979 at the Hilton Hotel on Connecticut Avenue. We were joined by the Energy Department, and we expected to have about 300 people.

We got about 1,200 from all over the world. An unbelievable success. The Corps ran the next one two years later. Then because of instructions from above, I'm not sure where, the Corps was not allowed to plan that conference anymore, I'm sorry to say. Fortunately the hydropower conference is still continuing under the auspices of the American Society of Civil Engineers and remains quite successful.

Well, back to the basic point. The hydropower study indicated that we could easily more than double the present hydroelectric power output in the United States by improving the efficiency of turbines in our existing projects, adding turbines to existing projects, and developing certain low-head projects. That was a good report. It hasn't been executed and probably never will be since the energy situation has improved. The need for the hydropower may have diminished but there is, in this country, an opportunity for increased hydropower.

On the navigation study, as discussed earlier, you recall, while director of Civil Works I asked that we develop a first-class water transportation system for the United States.

We needed to determine standard shape and size of a good waterway. We had 9-foot channels, 12-foot channels, 600-foot locks, 420-foot locks, as I recall—the depth over the sill varied, as did the radii of curvature on curves. In other words, the criterion varied to the point that we needed a standard against which every project would be designed.

We also felt that we needed to know a little bit more about the movement of the traffic and the relationship between the waterways and the trains and the highways. Where were the future tonnages going to come from on the waterways, et cetera?

Well, that was a good study. Unfortunately it became quite involved, and I am not sure it answered the original question and produced a simple drawing that showed the waterways, where we could extend them, which ones we could get rid of, and a cross-section of a properly designed channel, et cetera.

The next thing, then, was flood control. So I asked simply for a list of the 10 or 20 worst flood conditions in the United States. It turned out we didn't have a great number. The Santa Ana River in Los Angeles was number one on the list. That's being fixed now. We always knew we had trouble on the upper Mississippi if we had floods that exceeded the design plan. Sacramento also has a flood risk of major proportions.

Overall we had a good look into the future, and it turned out there wasn't all that much out there. We had to finish up what we had, and there were only a few new projects. Basically, it told us that the public works program as we've known it all these years was changing. It wasn't over, but almost, and it was changing. That meant that the Corps should think about other things.

While all this was going on, you realize, there were constraints being placed on our personnel strength. Going back to my days as director of Civil Works, I did not think the Corps of Engineers should perform any functions that could be performed by the American business community. The federal government shouldn't be operating hopper dredges if we could find companies that could do the same work and could pay them to do it. Economics are involved, but the principle is okay.

Among the more "political" efforts was the program to privatize the hopper dredging activity of the Corps. Following visits to the Corps' dredging program in the Northwest and along the Southeast and Gulf coasts, I began to realize private companies could do the job. Earlier the Corps had privatized the pipeline and barge business, so a precedent existed. The impetus to move came when severe personnel cuts were imposed on the Corps' workforce.

Even so, there was considerable resistance from within the Corps and surprisingly from without as well. The dredging industry was very skeptical of the Corps' intent and was not anxious to invest millions of dollars in building new dredges without some assurance that work would be forthcoming. Another obstacle arose when plans to upgrade the Corps' ancient dredge fleet became known.

These items generated great pressure on the members of Congress who dealt with water, transportation, environment, and to a lesser degree operation of the ports and waterways. The debates went on for months. Mr. Robert Losche was the lobbyist for the dredging industry, and I should add an extremely effective one—probably the best in the business.

Finally, with much input from Bill Murden, I went to see Senator [Bennett] Johnston from Louisiana who was responsible for public works appropriation in the Senate. Bill went with me and we outlined a plan which would satisfy most complaints and concerns. Basically the Corps would reduce its existing dredge fleet of some 24 to 26 hopper dredges to 5 or 6, including 3 new dredges to be authorized. As part of this legislation, the Corps would guarantee the commercial dredge fleet some 20 million cubic yards annually. This amount was several times greater than their capacity.

I may have the details off a bit, but the proposal was adopted, passed, and implemented. The American hopper dredge industry was soon developed, the Corps saved spaces and dollars and also received three new dredges—the *Yaquina*, *Wheeler*, and *Essayons*.

I also felt, and still do, that we could privatize the operation of our waterways systems and our hydropower plants. There are plenty of hydropower plants being operated in this country by private industry. Of course, you like to have your own people, and there is resistance within the family to doing those things, but when you're looking for new missions and you have to cut man years, how do you man new opportunities? The new missions are the future of the Corps, especially since the old ones are drying up rapidly.

Those background conditions affect specific projects. Among specific projects, I guess we should start off with Lock and Dam 26, which has been covered in detail as director of Civil Works and as deputy.

I remember clearly how much time and effort went into the wording of the authorizing document. We ultimately got authority and proceeded to construct the first lock and a new dam. We had been working on the project since 1972 or 1973 when we finally got everything back in place, and I believe in 1976 we had the groundbreaking.

So Lock and Dam 26 was a landmark, a defining moment, because it threw out the old authority basis for all the work we had done on the Ohio system. It meant, from now on, if we changed the capacity, we had to get new authority. It also brought into play the effect of increased traffic on the environment. Lock and Dam 26 was, in fact, the most important lock in the river because it was the primary bottleneck for the traffic on the upper Mississippi.

As discussed earlier, Joe Tofani and I had talked about the 1909 authority, and we had concluded before the judge's decision that we had stretched our authority. The Corps' interpretation was if you're going to spend millions to replace something, why not replace it to modern standards? That was not the question. The question really was, "What did the words in the law say?"

The answer to that question set a tone which showed up in the Tennessee-Tombigbee project. That project, which had been in the works almost a hundred years, was well under construction when challenged by the Izaak Walton League and the Louisville and Nashville Railroad. I think it was called L&N.

We were challenged on two bases. One, the Corps did not have the environmental impact assessments in good shape, and two, the Secretary of the Army lacked authority to make

certain changes. Because of my long background on this project, I ended up testifying. The Tennessee–Tombigbee was a hot project for almost my whole time in Washington.

I testified over a two-day period for 11 hours in Greenville, Mississippi. I think I'm the only Chief of Engineers who ever testified in court. I had been with the Tennessee–Tombigbee Waterway problem as director of Civil Works, deputy, and Chief. I had signed all the papers, one way or another, and I probably knew more about Tenn–Tom than any other senior person. I couldn't send somebody else because I felt I owed it to the Corps, and also, I was the one that knew the most about it.

To prepare, I asked that we set up a straw court. Mr. Seltzer helped me with that. He had people on each side of this issue in my office. We spent a whole day listening to the charges and the defenses, trying to get a feel for how the thing might go.

Ultimately, we did a good job. The judge concluded the plaintiffs had dilly-dallied around and waited too long to raise their protest, but the fact is that we had presented our case very well. I think, on balance, and even later in my discussions on the plaintiffs' team, the Corps was credited with having satisfactorily justified its actions.

There were two things that I think are relevant. One is that General Itschner, while he was director of Civil Works and later Chief of Engineers, had said openly he didn't think the Tennessee–Tombigbee project was a worthwhile project. I've talked to him since then. He indicated that now that it's built, he would not argue it, but at the time he just didn't think we should spend the money.

When I was district engineer in Tulsa, we had eliminated one of the three locks on the Verdigris River. The money we saved on that lock gave us enough funds to extend the head of navigation to a more favorable location.

That was all done with a general design memo. We presented this change to Congress in the annual budget, but we didn't go back to Congress to get it reauthorized. The history of various decisions in the past, General Pick's testimony, and all the rest, supported such decisions and were helpful in the Tenn–Tom authority debate.

Another issue became very sticky when one of our civilian employees in Mobile District had prepared a memorandum concerning an annual budget—it had to be about in 1975. He indicated the project was going to exceed a billion dollars and that he thought that, for political reasons, we should leave the budget item somewhat below a billion because he believed the Congress would react adversely to a billion-dollar project. That piece of paper was unbeknownst to me.

When the project came up to OCE at over a billion dollars, the annual budget had been finalized in the Congress. I personally went to the House of Representatives and to the Senate and explained to them that the newest total estimate was over a billion.

The total cost didn't affect the funding for the next [budget] year. It was, however, a number that impacted future project appropriations. The committees of Congress decided that they'd talk about it in the hearings, but they wouldn't change the budget, which was at the printing office, as I recall. That was done as an administrative expedient because of the timing.

Well, during the discovery process for the trial, the mentioned memorandum was located, and immediately the Corps was accused of withholding information from the Congress. Whoever wrote that memorandum all of a sudden became the most important man in the Corps. He had more authority and knew more about the world than the Chief of Engineers or anyone else. This memorandum was held up as an indication that the Corps was devious in its business.

Frankly, if you read the memorandum and knew nothing about my discussions with Congress, you'd come to the same conclusion.

Shortly after the case was settled in court, I got a call from Senator Stennis stating he felt the Senate's Public Works Committee was all over the Corps about withholding information. So I had to go to a special hearing. The chairman was Senator [Daniel Patrick] Moynihan of New York. His members were Senator [Alan] Simpson from Wyoming and Senator [Pete] Domenici, from New Mexico. Domenici was, to me, the most formidable person because of his deep knowledge of the money situation. He was really the money person. Senator Stennis excused himself from the hearings. I had gone over there with two or three people, and I had all the usual backup books for a hearing. I never opened a book. I did not have to because, having just gone through the trial, I was really pumped up with information.

Well, they grilled me for about two hours, and the staffers kept feeding questions up to Moynihan and Domenici which I'd answer promptly. I told them about coming over personally, et cetera. Finally, Domenici apparently said, "That's enough," and they knocked it off, but it was a grilling. Senator Moynihan was very complimentary afterwards. He told me that he was pleased with the hearing, and he thought that we'd done nothing wrong. As far as he was concerned, he wouldn't question the integrity of the Corps, as long as I was Chief. That was nice.

So we took all our books and went home.

Tennessee-Tombigbee was ultimately finished and I went to the dedication. Don Walden, the Tennessee-Tombigbee Waterway Association manager, had been very active through all of these years of political pressure and development. It was quite a celebration. I was happy to see that the court performance was recognized and that the Corps was given a reasonable amount of credit for the whole thing.

The Tennessee-Tombigbee will always be considered a real test. Interestingly enough, I think the Corps has become more successful in dealing with the environment and the opposition because of the Tennessee-Tombigbee. I don't mean to say that everybody got the idea the Corps was doing right, but it was such a bitter—really bitter—debate, that when we came out of that one in good shape, I think it made it easier for subsequent cases or situations to be resolved.

Q: What other projects occupied your attention as Chief?

A: I should talk briefly about the Bonneville project because it brings up another issue. The Bonneville project, originally built back in the 1930s or 1940s, was one of the make-work projects under the Roosevelt Administration, as I recall. The very small town of Bonneville grew up primarily because of the construction people. There were some natives there also. In the course of the years that followed, this little community of Bonneville had grown into a small, medium to lower-middle-class town. It was not a booming or even noticeably prosperous city.

When the new power plant was approved for Bonneville, that little village had to be moved. Getting it moved and then rebuilt turned out to be an issue of national significance.

Jack Gilkey was the district engineer there and did a tremendous job in keeping all the warring factions at the conference table. The people of Bonneville, the new Bonneville, really did extract out of the federal government a high price for moving to the new village. All the public facilities for a new town and the infrastructure were government responsibility.

Relocating towns was not a new thing. As I go back to my district days, quite a few towns were relocated. Most of the time the community cooperated. There was always a certain anguish because people had to leave their homes. They were done with minimum turbulence, but not Bonneville. Bonneville was a political game, and the Corps was the football; however, it's done now.

There were other big projects that I can speak of. We should talk a little bit about the problems of the lower Mississippi, which were not so much structural as they were environmental. The old river diversion structure kept the Mississippi River in the Mississippi River channel and precluded the river from going into the Atchafalaya. During the flood of 1974, the structure began to shake, rattle, and roll from great pressure and stress. The decision was taken to relieve it with a new structure. The Atchafalaya is certainly among the one or two most sensitive environmental areas in this country. The law on regulating the Mississippi River established a minimum flow into the Atchafalaya at all times to keep the Atchafalaya channel alive and also to provide water for the surrounding area, not people.

The Corps has come up with several plans to keep the Atchafalaya from filling up with sediment. Every one of those plans runs into a great deal of environmental difficulty. I'm not entirely sure what the present situation is; however, it did seem to me that the worst situation was to do nothing. If you left it alone, it was going to get in trouble, so therefore, the problem was, "What could you do?"

Everything that was attempted became an environmental tug-of-war. We never really solved the Atchafalaya problem during my time.

New Melones was another new project in the West. During the period of time in June 1979 when it was being filled, and prior to the dedication, the 14th of July 1979, an individual chained himself in the reservoir to a rock and said he was going to stay there and drown if necessary. He didn't. New Melones was certainly one of the last of the big projects to be completed and dedicated.

I think that's about enough. If there are specific questions on projects—there are just so many conflicts, so many environmental problems: the lower Chesapeake Bay, the James River, trouble on the Great Lakes because of the winds, et cetera.

Q: What about Indian Bend Wash?

A: Oh, Indian Bend Wash. I mentioned that earlier. Indian Bend Wash is a successful nonstructural solution in Scottsdale, Arizona. The city had help from Congressman [John Jacob] Rhodes, who was on the House of Representatives Appropriations Committee. I'd known him when I testified from the Missouri River Division. Rhodes was from Kansas originally.

Anyhow, we came up with a scheme that we would build in the floodway through Scottsdale some public facilities—recreation, golf, and other items—which if inundated would recover quickly. There were limited regulatory structures in there: some embankment protection and some channelization, but very minor. The entire area was landscaped. So when you go there, you may not know you're in a flood plain.

That, to me, was a landmark case because the Corps had used a nonstructural approach and produced a very fine example of how you could solve flood problems without building a dam.

Q: Should we touch briefly here on the urban studies program?

A: This was covered in detail earlier in our interview, but I will recount it briefly. You will recall, it grew out of a requirement by Senator Hruska of Nebraska when I was in Omaha. His new idea was to have all water-related federal money coming into the region through the Corps for management. My reaction was that that would be too controversial and that we'd be better off appointing the Corps as the coordinating agency of a committee made up of local people and the other agencies to develop a plan.

That first urban study turned out to be very helpful and attractive. Other cities requested help, and that effort developed into a program as discussed earlier. I don't know how many of these studies we did. I think we must have done 30 or so. It was a good engineering program which lasted over six years. There's no reason why those urban studies aren't of continued value.

My thought was then, and still is, a vision that if those studies were properly done and could be integrated into a software program in some fashion, then the city manager could very easily determine his budgets, his future priorities for investments, and on this integrated plan, make sure that the federal funds available are put to the most productive use and in the right sequence.

Q: Did it continue after you were Chief?

A: I think we had some studies going on. I'd have to go back and check. The districts took about three years to do one, as I recall.

Q: I might toss in one other topic here, for maybe just a couple of minutes. We've been talking about dredging. Was the disposal of dredged material a controversial issue while you were Chief?

A: It always was, and—yes. We covered this matter in some detail in the director of Civil Works period; however, it did continue through the 1976 to 1980 period. The study envisioned by Frank Koisch and commissioned by the Congress [in 1971 or 1972] to evaluate dredge material was still active and is going on, as far as I know. By the end of my term as Chief, we had learned that dredge material is not as bad as claimed. In the meantime, dredge "spoil" was guilty until we could prove otherwise, and much dredging was stopped.

As mentioned before, the problem was really worldwide. That circumstance led to the international dredging conference in London where the Corps played a big role. Out of that came certain international standards on dredging.

As a sidelight, we had to change our hopper-dredging procedures. For years we let the hopper overflow to get rid of excess water allowing the hoppers to contain more material. Well, the overflowing was stopped to reduce or avoid pollution. That meant we made a lot more trips to sea than before, and that meant we didn't get as much dredging done as we used to for the same cost.

You will recall that because of these experiences, I wrote a letter while Chief to Mr. Roger Peterson, president of the Audubon Society, and proposed that if he would give us the criteria, I thought we could build wetlands and habitat for endangered species, or whatever. I'm still convinced the Corps can be helpful in this regard.

As you can guess, we undertook quite an aggressive program to put the best light on the dredge material situation. After all, a great factor in the U.S. economic picture was the operation of ports, harbors, and waterways.

Q: In addition to standard divisions and labs, what other Corps organizations reported to the Chief?

A: There are three of them: the Board of Engineers for Rivers and Harbors, the Engineer Studies Center, and the educational facility at Huntsville. The Board of Engineers for Rivers and Harbors was established by Congress with the idea of providing an independent review capability at the highest level to look at projects for the Chief of Engineers before they were recommended to the Congress.

That board, in my judgment, worked directly for the Chief of Engineers, not for the director of Civil Works. In fact, the director of Civil Works is the one element that the Board of Engineers for Rivers and Harbors should not have worked for, because the board's mission was to review projects after they had passed through the staff system and were ready for the Chief's final review.

The point is that the board was there to provide the Chief of Engineers an independent review of these projects. I'm not talking only about the board, which is comprised of division engineers. I'm talking about the staff as well. The permanent staff of the Board of Engineers for Rivers and Harbors was composed of truly outstanding people—some of the best minds we had. People came from our districts to serve. The board conducted a training program for selected district personnel called the Planning Associates Program.

If a project cleared the Board of Engineers for Rivers and Harbors, the Chief then could sign off and send it on its way with a high level of comfort that it was technically adequate, did not violate policies or laws, and deserved whatever was recommended.



Meg Sergeant, wife of Colonel Howard Sergeant, painted this portrait of General Morris when he was Chief of Engineers.

I sincerely believe that the Board of Engineers for Rivers and Harbors was a most valuable institution in protecting the taxpayers. Why it was abolished is not clear. I'm sure it was an economy move, and somebody thought it was just a review board and probably we could get along without it. We're not going to get along without it. We're going to pay a very serious price for not having it, either in poor projects getting through or in hiring somebody else to do what they were doing in the first place.

I notice now we're turning to the National Academy of Engineering to provide its input on Corps projects. If the Board of Engineers for Rivers and Harbors existed, such might not have been needed.

I considered it a high honor to be chairman of the Board of Engineers for Rivers and Harbors. I tried always to reflect my high regard for the board and staff and the importance of their job.

I went to the deactivation of the board. I was sad. I feel that it was a mistake. Why you have to lose those things is not clear, but it happened.

The Engineer Studies Group was called the Strategic Planning Group. Many outstanding engineers led the group—Dave Parker, Don Weinert, Bill Stewart, et al. Don now is the executive director of the National Society of Professional Engineers. George Orrell was a top civilian who went to the “new” FEMA. I turned to them to give me a hand with organizational matters. We put together, after testing it among ourselves, what I considered to be the optimum organization for the Office of the Chief of Engineers. That was the two directors with a support division of technical people, similar to the division-level organization.

We tested that in many different ways. We would cut it up, put it back together again, and I was impressed with how thoroughly and how well they did their job. They also helped develop the energy conservation plan for the Department of the Army. Don Weinert and his people came together with a plan of how we should go about that. We looked at drawing down the size of the Army—the Army, not the Corps. One analysis, which I thought was very valuable, was to determine the unused capacity of existing posts. How many more people could properly be put in, say, Fort Benning? It wasn’t so much looking at which ones we should get rid of, but which ones could add capacity efficiently, and that would then free up space that could be assessed to fill needs or whatever.

Having discussed the trend that our public works program would atrophy and change as we had known it, the question arose, “What should be the future skill levels in the Corps? What kind of people should be in the Corps?”

Some of the kinds of people that we had needed in the past wouldn’t be needed so much in the future, and some we didn’t have in the past we’d definitely need in the future. The study group’s analysis showed all of that. The thing I remember was that the crucial profession for the future was projected to be mechanical engineering.

So those are just three or four examples of the Engineer Studies Group, but they came directly to me. They helped a bit with the dredge privatization analysis, but not as much as Bill Murden and his people.

The third activity was Huntsville. I think I’ve already covered somewhat the training program within the Corps. John Bryson worked for me in Omaha as our personnel guy. He was a stick-out on the way he saw things. So he came to Washington about the time I came in to be director of Civil Works.

The Corps’ training problem initially was an economy thing. District engineers were running schools that weren’t compatible with what other district engineers were doing, as an example. So I asked John to analyze the on-going training. Out of that came the famous purple book of his that everybody came to know.

More fundamentally, it developed the Corps’ “university,” or whatever you want to call it, at Huntsville. The center started off on a shoestring and now it’s housed in a new building owned by the University of Alabama at Huntsville. The Corps is using some of those facilities. On a recent visit I was really impressed with how well the program has moved forward. It is a very good program.

Training the Corps’ people was the first objective, but the school should be able to pay for itself by training other people, doing work for others. Someday, soon I hope, the facility should become accredited. It could then sponsor a master’s degree course in management.

Nowhere is there more and better talent than in the Corps' construction engineering management. While a bit visionary, that's a reasonably good job for someone to make happen.

I don't want to give you the idea that everything we did went through one of those three, but collectively, they were very helpful. I didn't believe in ad hoc committees. I may have told you that earlier. I felt that if you had to form an ad hoc committee, you should get rid of it as soon as possible. We had a couple of ad hoc committees, but they didn't last very long. They did their job, and then they were disposed of.

So I liked these three outfits. They earned their pay.

Q: You mentioned that you wanted to talk about energy conservation on the military side of the house.

A: That's correct, I'm glad you brought that back. The studies group came up with the only reasonable solution—to make a survey of major posts against certain criteria to see if they were operating as efficiently as they might, or could they be improved.

I was successful in getting the government, the Army, to budget a certain amount of money to do these surveys. After we made a few, the Energy Watch was implemented and overall energy consumption declined. The post commanders felt we were taking money that would have otherwise been theirs and using it for a specific subject. That may or not be true. If I had been a post commander, I would have felt the same way, I am sure, but my understanding was that most of that money was new money, not shaved off the top. Nevertheless, we did do the energy survey for the Army.

In the energy arena the Corps took the initiative for the Army. Another was mobilization, which we've talked about, and again, the studies group helped with that one.

Of course, the studies group didn't wait for the Chief of Engineers to call up and give them a job. They were always reviewing certain Corps missions. Don Weinert was very good, and George Orrell also was excellent. The two of them made a very nice team, and their presentations were high-type and professional in a quiet, not overly animated way. At briefings in the Pentagon they did very well. That helped George get the job in FEMA, I expect.

Q: I'd like to ask you now about your impact on the Corps' historical program, and your interest in the Historical Foundation. I think some of this accompanied the Bicentennial.

A: I have said several times that I believed that the people who knew the Corps liked the Corps. I knew the Corps had a great history. I did not inaugurate the history program. I don't mean to take any credit for that, but I do think that in the course of time, I had something to do with the momentum that the program developed, and maybe I don't deserve that either. Some of the things I did were probably forced upon me because of national attitudes towards the Corps, the recurring move to reorganize or put the Corps out of business, and my experiences in district work, particularly in Tulsa, where I soon learned that it was better to have the initiative than to react. If there was a problem, I tried to get it out in the public arena quickly before it got there from another source.

The same thing was true in Omaha, where we had such a reaction from the environmentalists and we were getting nowhere with the press until we established, as I mentioned, a separate arrangement with the local newspapers to put our office on somebody's beat.

After I came to Washington in 1972, I visited many of our projects. The one that sticks in my mind is Bonneville, where we had a beautiful visitors center right next to a—well, I should back up a bit.

When I was in Tulsa, and also up in Omaha, I made sure we had good visitors centers, not as a matter of us popping out our chests so much as getting the visitors organized so they didn't get lost, injured, or do something dumb out of ignorance while they were on our property. So each project had a visitors information center and included an exhibit to say a little about the project and maybe about the Corps.

As a new director of Civil Works, I visited several projects including Bonneville, which is adjacent to a very lovely Department of the Interior fish hatchery. As you enter the project area you are greeted by an attractive sign that says, "You are now entering the Department of the Interior fish hatchery. Visitors welcome," et cetera. At our visitors center I began to ask visiting people, "Where are you?" They'd say, "Oh, we're at the Department of the Interior's fish hatchery." I thought, "This isn't too good."

We weren't doing a good job. I quickly required every dam or other public use facility to have a castle on it; also, that every project's visitors area include something about the history. Out of that we came up with the visitors center program in which every project had a visitors center, and a selected number of locations would contain regional visitors centers to tell the regional story and the history of the Corps.

So that kind of outgoing, best-foot-forward type of promotion was a little bit self-serving. There's no question about that. In fact, I got an article in Jack Anderson's column accusing me of beating the drum, tub-thumping. I wrote him back and said, "You're right. I'm the biggest tub-thumper they've got, and if I didn't do it, who would?" So he sent me an autographed picture to his favorite "tub-thumper," which was kind of neat.

The point was that I felt we needed to get the Corps out telling its story. Also, the district history program was moving along well, and just by accident, the Tulsa District's history was published while I was director of Civil Works. I began to read these histories and encouraged district histories be prepared.

As far as the Chiefs' and senior civilians' oral histories, like you're doing with me, is concerned, my only concern there was that we didn't miss somebody like General W.K. Wilson, who was senior—I wanted to make sure we got the older people in before it was too late.

Out of that, I developed a little book called *Corps Vignettes*, which may not have gotten much attention, but to me it was very nice. With the help of the historical folks, we accumulated 20 or 30, maybe 40 little stories, as you've seen. We published those in a nice cover which I gave to visitors. I must have given out hundreds of them. They made nice mementos, but the important value was that as people read them, they learned a little something about the Corps—the human side, not so much the technical stuff.

I think if you ask the people around, they will tell you that I was fairly aggressive in my efforts to improve the Corps' self-promotion.

Q: Then the Historical Foundation?

A: Oh, that's another. I always felt that there should be an organization, somehow or another, to do for the Corps what the Ordnance Association and what the Association of the United States Army, and so forth, do for the Army and for the other branches. We didn't have anything like

that. We had a museum out at Fort Belvoir, on the military, which was fine, but we had nothing to service the public works or engineer command side.

I was fortunate and honored to be selected as the Straub Lecturer for the U.S. Steel Association in 1976. I gave this lecture. Unexpectedly, I received a check in the mail for \$2,000 as an honorarium. Well, I couldn't keep the money, of course, but I did get permission to use it for a charitable, tax-exempt activity.

Manning Seltzer was brought in, and some others, and we started the Corps of Engineers Historical Foundation. That \$2,000 was used to finance the first move.

Well, we got off to a bad start in one sense. We had a strong group of people to help us. The idea was to do the history, to set up some scholarships, and to provide a source of pride and understanding of the role of the Corps of Engineers in the history of this country. The foundation was not intended to be a professional organization, or anything like that.

Two initiatives surfaced. One was the statue of the Army engineers somewhere in the Washington area, like there is for the Seabees and others, and the second one was a museum. We hired Felix de Weldon, an outstanding sculptor who sculpted the Marine Corps' Iwo Jima memorial. I went to his place up in New England—he showed me a mockup of the monument he would propose.

Unfortunately, the monument appeared to get the first priority. The museum was supposed to have gotten first priority because it was much easier to deal with. Putting in a monument was a big problem.

So we frittered away quite a bit of time and energy on that. General Clarke was chosen to be the first president of the Historical Foundation. We began to make progress on a museum at the Humphreys Engineer Center near Fort Belvoir. We raised quite a bit of money from the industry to build it, but we lost a lot of ground when the decision was made not to put the Corps headquarters out there. Now everything is tied to the southeast federal facility, and that's still in abeyance—or in the background, at least.

While all this was going on, the engineer regiment was established at Fort Leonard Wood, and it dealt directly with the soldiers and had memberships. The Historical Foundation charter did not permit members, which maybe was not a good plan. In any case we soon found we had one group dealing with the military and one group dealing with the civil program, and that wasn't good. General Clarke tried, in 1989, to have them put together. General [Daniel R.] Schroeder, the first CG at Fort Leonard Wood, was lukewarm to it because he was so new. Two years later, I went to see Schroeder with General Clarke's blessing, and this time, the CG agreed to put them together into a new organization which became the Army Engineer Association [AEA]. The Army Engineer Association should be successful. It has a lot going for it.

People say, "Why do I need the AEA and SAME?" Well, SAME is a professional organization. It deals with engineering. The Army Engineer Association deals with the Corps of Engineers' family and history—the soldiers and the civilians, particularly the civilians, which we've not been able yet to attract adequately, but that's going to happen.

So that's what the AEA's about. The AEA represents the entire engineering family. The Army element of SAME is that part of the community which is professional. So it's a subset of the AEA basically.

That's the Historical Foundation's story. I do take credit for starting it and for assisting its being merged into the new organization, the Army Engineer Association, which was approved by the Secretary of the Army, and the Chief of Staff. So far, everybody's behind it.

The Corps is too valuable historically, and it's too important, presently and for the future, not to have a coalescence of people who are interested in it.

The Army Engineer Association will give you that kind of a grassroots network if needed.

We'll have a museum, and someday we'll have a monument. Initially we must identify and credit the civilian personnel who have been so important in the Corps. The point is not to overlook the military, however. Communicating with the military is rather easy using the units, troop units, and the registers and rosters of retired military people. The civilian records are not that good, and actually, the Corps owes so much to its civilian people, it's got to take on the problem. We need some people in the civilian community to help us with that.

I didn't mean to say our civilians are more important than the military. It's just that the military is so much easier to deal with and attract to an organization like the AEA.

Q: Let's begin by talking about your retirement. You were extended three months because of the Israeli air base project until the end of September 1980. What was your retirement ceremony like?

A: As retirement approached, Ted Gay, executive, asked my wishes about a banquet, dinner-dance, gifts, et cetera, for the occasion. I had the idea that formal affairs were not only expensive but somewhat inconvenient, and consequently many would not be able to attend. I really wanted to say goodbye to all the folks at the headquarters, and this led to my asking to have a picnic for the employees and their families. That would be a fine farewell event for me. As for gifts, I told Ted I only wanted one—whatever that was to be didn't matter but should not be very pricey.

With help from Bob Blakeley and many others, I'm sure, Ted delivered. I do not know how many came, but I was pleased so many did, especially the clerks and younger employees and so many children. The food, the weather, the games, and the program were just right. My gift was a battery-operated clock with my picture in a war bonnet on the dial. I still have the clock in my office and it runs fine—just like the picnic.

Previously, the change of Chiefs was a relatively simple event which occurred in the Chief's office or in a conference room. When I became Chief, the signal event, as mentioned, was passing the MacArthur Castles from General Gribble to me. We shook hands and that was it. He went home and I went to his desk.

During my term, the Corps of Engineers became a major command. Consequently, my retirement introduced a formal military change-of-command ceremony for the first time. Colonel Ted Gay, the chief of staff, arranged for the Pension Building, which was in the process of being modernized. This magnificent building was within walking distance of the office. General Vessey, the Deputy Chief of Staff, was the senior Army person present and represented the Chief of Staff.

The principals were on a dais and their families were in the front row. Behind the dais were flags representing all the Corps divisions and, of course, the national colors and the Corps of Engineers command flag. Several hundred attendees came from all over the Corps.

Mr. Blumenfeld was there from the secretary's office. General Vessey made brief remarks and then with help from the command sergeant major passed the colors from me to General Bratton. Then I made a few brief remarks and General Bratton followed. A reception at the other end of the Pension Building concluded the ceremony. Everybody seemed pleased. The organizers did a great job.

We had visitors from the other services, and later the Navy patterned a ceremony after ours. While the subsequent changes of command have varied somewhat, I think it's still formalized, because the U.S. Army Corps of Engineers is a major command.

You may recall my earlier comments that as I was leaving for the Pension Building, Mr. Jim McIntyre, the director of the Office of Management and Budget for President Carter, called and said, "Jack, go buy your new airplane."

That same afternoon my retirement parade was held at Fort Myer. This impressive ceremony included full colors, the old guard, the Pershing's Own, all the state flags, and, of course, the U.S. colors. A beautiful day. This was a Friday, as I recall. The preceding Tuesday I stepped into a hole and damaged my ankle. I stayed off of my feet until that morning and was able to do the parade. We made it all right, but it wasn't very pleasant. As I trooped the line of flags I stopped and talked to the young man who was carrying the Maryland flag. I needed a break about that time so that was a good way to do it.

Then there were a couple of unique aspects about the ceremony. The retiree is allowed to select the music while he troops the line. I had them play "Please Release Me, Let Me Go." A little bizarre, a little fresh maybe, but it was a song that everybody recognized, and you could hear the people laughing as the band started. I wasn't that anxious to leave, but my time had come.

Then Secretary Alexander presented the retirement certificate and made a very nice speech. I may have been the only general he retired during the time he was secretary, certainly one of a few. In any case, his presence was quite an honor to me and a sign of his respect for the Corps. Also, there were people present from the Congress. Anyone who's gone through the retirement ceremony finds it quite intimate and very personal.

Gerry was recognized. She received the wife's retirement certificate and a bouquet of roses. After the ceremony we had a small reception. That was the end of it. I was almost through. I went home and the next morning when I got up I wasn't in the Army anymore.

Of course, getting out of the Army involves a lot of administrative details, but the Army staff and the good people at the Corps made it all very easy.

So my leaving the Corps was pleasant. It fills your ego for a short while. Many people asked me if I was sorry to leave. I rationalized that I'd had over 37 years in the Army and I'd done all the things that I could have ever expected to do and more. I'd had my crack at being Chief of Engineers, and there was no other place to go for me in the Army unless something unusual would happen, which it didn't. My time was up. I'd been in the Army longer than most people are allowed to stay based on age or total service.

My only regret was leaving unfinished a few things I had begun. The reorganization of the headquarters was principal in that regard. Also, I could have used another month on the Israeli airfield thing, but it wasn't necessary. The real regret was a feeling that I'd reached the peak of productivity and could accomplish more and make decisions easier than at any time in my career.

On the other hand, I was anxious to try my hand at something new. I had accepted a position in a major international construction company as the director of international business. The company was headquartered in Rotterdam, Holland.

Q: Your successor as Chief of Engineers was General Joseph Bratton. Could you talk about the choice of the next Chief of Engineers and what role the sitting chief plays in that selection process?

A: Well, as discussed earlier, the process to select the Chief of Engineers is spelled out fairly carefully. A board of five generals, including myself, all senior to anyone eligible to be selected was chaired by General John Vessey, then Vice Chief of Staff.

We considered all colonels and higher and selected the three candidates considered best qualified in our collective view. Major General Joseph Bratton stood alone at the top. He was ultimately recommended to the Congress by the president. As a matter of interest, age was a deciding factor in the case of several excellent major generals.

There was an interesting story associated with selecting my successor. Keep in mind General Bratton had spent most of his career in the nuclear business and was less well known than others in the Corps during the mid-1970s. Commencing 1 July 1976 and into late 1979, there were four leading candidates whom I had begun to consider: Major General Richard E. McConnell, division engineer, North Pacific Division; Major General Carroll LeTellier, who was division engineer in Atlanta; Major General Charles McGinnis, director of Civil Works; and Major General Wesley Peel, commanding general of Fort Leonard Wood. By late 1979, steps had been taken to add to General Bratton's Corps experience. You have to understand, the Chief of Engineers only gets one vote on this, but because he knows these people so well, his recommendations are respected. Every one of those four generals had to leave the service before I did and therefore were not available. McConnell had serious health problems. LeTellier had had surgery, which wasn't prohibitive but it did lead him to retire earlier than expected. McGinnis decided he needed to undertake another career for a variety of reasons. Peel's father was tragically killed in an accident in Texas and he felt that he had to retire and go home for family reasons. So those four candidates were removed.

Fortunately, a couple of years earlier General Bratton had returned to the Corps and was rapidly becoming reacquainted to Corps operations. Harry Griffith, an outstanding general who was well trained, had just been selected for promotion to lieutenant general to fill a key position in the Defense Nuclear Agency—a job for which Bratton was exceptionally qualified. There was some discussion whether or not it would be better to try to switch him and Griffith for the Army's benefit; however, the die had been cast.

The only other consideration that I recall was should we bring in a lieutenant general as opposed to promoting someone into the job. There was one truly outstanding lieutenant general who would have been a great Chief of Engineers. Still, everyone was happy with Bratton, and there was an advantage to promoting someone up to the job. One of the reasons why generals are retired relatively early from the Army is so others can move up—not laterally.

Q: Did you have an opportunity—I guess informally, rather than formally—to pass on some advice to General Bratton, any major points that you wanted to make?

A: I have to say I think I passed more advice on to him than General Gribble did to me, but remember that I had spent over three years working closely with General Gribble. Here's what we did with General Bratton. When he emerged as a potential candidate for becoming Chief, we made some assignments rather quickly to increase his Corps experience base. First as the

South Atlantic Division's engineer in Atlanta. Shortly after that as the deputy when General Johnson retired. So in the course of a couple of years, he had two important exposures—division engineer and deputy chief.

While deputy, he and I spent a lot of time talking together, and there were some specific suggestions. The thing I tried to emphasize to Joe was he had a great staff and the Corps was made up of good people, so he should give the authority to the people who work for him and let them do the work. Also, unless he had some reason to change or modify a staff recommendation, he should accept it. Otherwise, the paperwork would kill him. The other thing I mentioned was to keep the OCE organization that was being put in place on track. In that, I did suggest something about keeping the ACE's shop small and staff oriented and getting the director of the Engineering and Construction Support organized with the top civilian in charge.

The other point I recall mentioning was the hazardous waste program. Joe was a little concerned about taking on that mission because he felt the Corps wasn't properly trained to do it. Well, neither was anyone else, and besides, the Corps could do it better, so I felt he should try to land that Superfund program. Which he did.

You know, I'm not a great believer in passing advice to your successor. One should answer questions if asked. As a matter of fact, I never believed in overlaps. Everybody has to arrive at his own conclusions on what he's going to do.

You may recall that back in our earlier discussions I had the good fortune of having been in OCE for four years after having been in a Corps of Engineers division. I knew what I wanted to do when I took over, but even so, I had to sit in that chair for a little while to get the—to really grasp the breadth of responsibility and authority. After you've done that, whatever somebody may have told you probably has been forgotten.

In summarizing the period from 1976 to 1980, I believed the Chief of Engineers' primary role was to be a practical visionary who stayed in close communication with his people and represented them and the organization with deep pride and respect. Respect for the Corps' illustrious past, which when combined with pride in the quality and capability of the men and women under his command, provided him the confidence to defend the Corps and to seek aggressively new and challenging roles which ensured a solid future for the organization. I personally never doubted that the Corps would respond to any challenges. In fact, I sincerely believed one of the two ways to weaken the Corps would be to fail to change when necessary or fail to grasp new opportunities as they arose. The other, more insidious threat would be to weaken the ability of the commander to command. History has shown that the transfer of the command-and-control mechanism into the hands of those who do not have direct control responsibilities for the people and the mission is a more dangerous and ultimately fatal trend.

This process had been in the works only about seven years when I retired and at that time seemed under control. I am afraid the process is now somewhat out of control and worsening. It needs to be reevaluated and reversed quickly if appropriate.

Answering the Army's need for good facilities for its soldiers and their families, new or at least well-maintained support activities for the Army's equipment, and strengthening our national defense is the Chief's primary responsibility. All else leads to the fulfillment of the Corps' mission as part of the U.S. Army. Public works, albeit of great positive value to the nation and a steady demand on the Chief's time and attention, is in its best sense a source of



General Morris, outgoing Chief of Engineers, introduced Major General Joseph K. Bratton, incoming Chief, to Senator Jennings Randolph (D-WV), in September 1980.

especially well-trained and talented engineer personnel in case of full national mobilization or when needed to respond to national or international military needs or emergencies.

The responsibilities of the Chief of Engineers, while great, were distributed among a strong staff with excellent credentials. My most pressing personal responsibility involved dealings outside the organization—the White House, Congress, state and foreign governments, public and professional agencies, and of course DOD and DA.

As a final thought, I thoroughly enjoyed the job and looked forward to going to work every day. You cannot beat the work or the fine people who helped get it done.

Q: How did you rate yourself on achieving the goals which you outlined at the beginning of your term as Chief of Engineers?

A: My appraisal is probably about a “B.” Significant developments occurred in each.

Stay in Business “A.” We did stay in business in spite of several serious challenges. Our position with the White House and the Executive Branch strengthened during the period.

Support the Total Army “A-.” The most significant effort brought forth many attractive initiatives in the environmental, energy, and maintenance fields. Support

to facilities engineering by the Corps districts (one stop shopping) was singularly successful. Mobilization efforts assisted the Army staff. Becoming a major command allowed the Chief to meet directly with the Chief of Staff of the Army and his commanders. This goal must remain in some form. This is the Corps' bedrock criteria. 1976 to 1980 showed good progress and momentum increased, but there is always more to do and keep doing.

Support the Nation "B." Sister service relations were excellent and constructive, but meaningful relations with other federal agencies—Department of Energy, Department of Transportation, Department of State, et cetera—were disappointing, possibly excepting EPA. International work thrived. The Corps' professional presence was apparent in China, Israel, Egypt, Saudi Arabia, Russia, and others. The Corps' role in environmental matters stabilized as the public works program was transformed into regulatory and O&M.

Get OCE out of the Operations Business "C." Good progress which allowed headquarters to deal with crucial external issues and concentrate on the first three goals more thoroughly. At the same time reorganization of the headquarters was initiated but not finalized, leading to problems after 1980.

Post-Retirement Career

Q: Turning to your retirement career, then, as a retired Chief of Engineers you must have had a lot of options about what you could do. How did you sort through those and decide what to do?

A: First off, I had no magic equation that I plugged into. I did give thought to the areas where I could be of some value. My father had been a very good businessman, and I learned a lot by association with him. There is a difference in working for somebody and working for yourself. My father believed that it's always better to work for yourself, even with a small business, than to work for someone else.

I like that thought, and another factor was the field of effort. Many Corps retirees do well in engineering companies. My attraction was toward construction.

We didn't want to move. Gerry and I liked it in the Washington area, and we would have moved for the right job but we didn't particularly want to. We refused one job which was extremely attractive because we had to move. We owned our home, and this was our "headquarters" area. I'm from Maryland; she's from North Carolina.

I asked myself how I would explain taking a job with a company that had previously worked for the Corps, and also why I chose one of them over another. So I finally decided not to go to work for anybody who had worked for the Corps. At least, not immediately. That was naive, I expect, but I made the decision and that eliminated many good prospects. It turned out that a week before I retired, I was asked to be the director of international operations for Royal Volker Stevin—then the eleventh largest construction company in the world. The effort was mainly in dredging, a field I was pretty comfortable with, plus a lot of roads and ports, which I liked also. They offered me a very nice salary. It was less than I might have gotten from some of the American companies, but the benefits were especially attractive. Also, I would be the senior American—or non-Dutch person in the company.

They said, "You can stay in America, but we want you to come over here once a quarter to our business meetings. We also want you to look at the international scene. You can do that from

there as well as you can from here." They financed us to set up an office here in Washington, which I did. That worked out very nicely. It was a fine job. It gave me a chance to get my feet on the ground in the construction business and also gave me an office of my own which later facilitated the transition into working for myself.

I was successful in getting new work, but fairly soon I became a troubleshooter for problems in contracts using American money. I was sent to Yemen a couple of times to help straighten out a USAID project. The claim was over \$100 million, so it was a big exercise. Yemen's not the greatest place in the world. As someone joked, "It's not the end of the world, but you can see it from there."

Then there was the Zilwaukee Bridge in Michigan which had failed. The Dutch were great engineers and business people, but the labor situation up in Michigan presented them with many unfamiliar problems. Ultimately, at my urging, the contract was terminated for the convenience of the owner, allowing our company to withdraw from the job successfully.

There were also efforts on the Miami People Carrier and the Baltimore Harbor Tunnel projects.

I hired an ex-Corps colonel, Jess Baldwin, to help me. Right after Thanksgiving 1980, two months after opening the office, I was called from Rotterdam by the principal who hired me. He indicated that for the first time in its history, the company incurred a big loss. I suggested that might mean they would not need me anymore. He said, "No," and they kept me.

The international business had to be put aside while they straightened up their internal problems and kept their home base work solid. That's when they put me in the troubleshooting business. Even so, I was not fully engaged. I was asked to stay at least another year and told I could do other work so long as I was available when they needed me. That was really very nice of them. By my second or third year I had met many people in Holland and formed, informally, a company called Holland-American Industry Group with a friend over there. He searched out companies that needed representation in the United States, so in the course of a year or two I was representing about eight or nine companies from Holland. Finally, when I was disengaged from Volker Stevin we had a solid business in place.

That business included some work with Royal Dutch Shell, and this led to a real business adventure. Royal Dutch had a nondestructive procedure for testing pavements. The Corps of Engineers used a vibrating process that was good but very cumbersome, while the Dutch equipment was small and easily shipped. You could tow it behind a car or Jeep down the runway or over the highway.

Royal Dutch Shell wanted to export that process to the United States. Dr. Matthew Witczak, at the University of Maryland, was a leader in the asphalt and pavement business and a consultant to the Dutch process in Holland. He and I began to work together trying to export or set up its company, Pavement Consultancy Service [PCS], in the U.S. The Royal Dutch people had a wholly-owned Dutch company in New York called Scallop which financed the startup of PCS, United States. Scallop personnel didn't want to get involved directly, so they contracted with my new company, J. W. Morris, Ltd., to organize the project. I was hired as the manager, and they paid J. W. Morris, Ltd. for all personnel and administrative support.

That expanded our office. I had already hired Jess Baldwin and another ex-Corps major, Tom Donnelly, to help, but PCS pushed our office staff up to about 20 people. Tom was promoting this product rather aggressively, but all of a sudden the main company back in Holland decided they wanted to get out of the business. They sold PCS, and immediately I was told by

the people in New York they were only in this because they were told to by the people in Holland and that I was to get rid of the business.

By this time, Matt and I had become very much involved in the activity. So I went to New York and bought it myself. I became the owner of an engineering specialty company, one of my exciting endeavors. Subsequently, Witczak became part owner. He was the real technical brains of the company and had assembled a group of smart, ambitious graduates of the University of Maryland. Ultimately, we sold it to Law Engineering of Atlanta.

In the PCS process, Dr. Witczak asked me to give a series of lectures on management at the University of Maryland. Ultimately, he asked if I would help develop a course of instruction in construction engineering management. I agreed and became a member of a committee headed up by Mr. James Clark, the owner of Hyman Construction and Omni Construction. Clark is a regent and put up half a million dollars, as I recall, of his own money and another half million in matching funds, which generated a million and a half dollars to underwrite the chair and this program. I was the deputy chairman and did most of the course organization work and wrote the scenarios. We ran our paper up to the president, and it was accepted as written.

At that time it was all pro bono. It was just an interesting exercise. I was then asked to organize the course while a chair professor was sought. From the aspirants they selected an individual from Georgia Tech, and he agreed to take the job. Then I was asked to begin collecting the staff and get everything ready because the chairperson could not arrive until late summer and the course was to start in September.

Lo and behold, about the middle of August the selectee announced he could not accept the job. I was asked if I would take over the chair duties as acting professor. So that's how I got to be chair professor at the University of Maryland for about three years. That was going on while we were marketing PCS and while I was representing several overseas companies including Partek, a Finnish company that was in the construction business. I have enjoyed immensely working with Partek. Two other Finnish companies were in our fold, also. So we had a fairly big program going. We had hired Tom Donnelly, as mentioned, plus the four engineers out of the University of Maryland. Also retired Colonels Bob Bangert, Al Costanza, and Max Imhoff were helping. Later, Clay Meyers, Captain Meyers, USN [retired], was employed to expand our civil engineering services to include operation and maintenance.

In 1985 J. W. Morris, Ltd. was fairly busy. As I say, we had about 20 people, we owned the pavement testing company, and we were representing a group of foreign companies. None of these were competing with each other, and—

Q: And you were teaching.

A: And I was teaching at the University of Maryland. That became a problem, incidentally, because it ties you down. My wife told me when I mentioned the opportunity to teach, "Jack, that's going to tie you down too much," and that was the only comment she made. I decided to do it because it had other benefits.

Anyhow, we were going well—the financials looked good, the people were fairly happy and had a good retirement plan and benefits, et cetera—except the teaching was tying us down as Gerry had predicted. Then one day Dr. Witczak asked to move PCS from my office closer to him at the University of Maryland. So we agreed but kept a liaison in Arlington. I offered some of the released space to the Water Resources Congress. Joe Tofani had been running WRC and had just stepped down. So they moved in with us with Ray Leonard in charge. I continued as the chairman of PCS.

At that time, I began to concern myself more with these companies we were representing in the United States. We were up to about 12 from Europe and some from other areas. Also, I had been to China twice to teach school and had some contacts in China. Saudi Arabia had gotten to be important because of my background and new associations with a firm in Saudi Arabia. The pavement business was attractive in Saudi, so I began going back and forth again to Saudi Arabia. Our international base had grown, and we were really spreading out quite nicely.

Then out of the clear blue sky I got a call one day to go see Mr. John Toups, chairman of Planning Research Corporation headquartered in McLean. John asked me if I'd help him find somebody to take over the engineering group which was, at that time, the largest engineering group in the United States. Its companies included Frederick R. Harris, Consouer Townsend, Environmental Management Incorporated, and Planning & Development Corp.

So I sent resumes to him on several candidates. I really tried to get Mr. Toups to take John Wall, even though John wasn't going to retire from the Army for six or eight months. Finally, I told Mr. Toups I didn't have anyone left to suggest. He said, "Well, why don't you take it?" By this time I figured I would be too old and also I felt he wanted to sell the engineering group. He promised me he would not put it on the market for a couple of years.

I then told Mr. Toups about my company business, and he offered to buy it. I should have sold it, perhaps, but I concluded I might not be with PRC very long, so I had better not abandon J. W. Morris, Ltd. so soon. To eliminate any conflict I formed a new company called Engineer Management Services, Inc. [EMSI], Ltd. Captain Meyers became the president of EMSI and I sold all the J.W. Morris, Ltd. work to EMSI.

As events developed, PRC was sold within two years anyway. It wasn't put on the market; Mr. Toups lived up to his word. He received a very attractive offer from Ashland Technology Company [ATC], which owned DMJM, Holmes & Narver, and Williams Bros. Company in Tulsa. I was out of a job. Al Dorman, who was the chairman of ATC, certainly wasn't going to give me his job, but he asked me to be his assistant.

There was still some engineering work being done in PRC, and I was kept on as the engineer for two years. I wasn't out of a job completely, but it was just a matter of time. I was also allowed to work for Ashland on an hourly basis up to 50 percent of my time.

During the 1987 SAME meeting in California, I received a call from Governor Bellmon of Oklahoma, whom I had known for many years. He asked if I could prepare a proposal for the state of Oklahoma to submit in the superconducting super collider competition. He asked me to think it over and let him know. I said, "I will call tomorrow and tell you if I can do it." I talked to Mr. Dorman and his people, who happened to be at the SAME in San Francisco and found out that DMJM and Bechtel had a team of people who had worked on a similar study and could be made available if Oklahoma had a site. Most states had been working on the project for more than a year. We only had three months to get Oklahoma's report together. So, to make a long story short, I accepted that task. J.W. Morris, Ltd. was back in business all of a sudden.

EMSI was set up as a company to have the contract with the state of Oklahoma to perform the study and I was the technical adviser and overseer and Chuck McGinnis was liaison with the Governor's office. Structurally it was sound, and Bechtel and DMJM were subcontractors to us. We put together a very nice report on time.

My work at Ashland continued also. So that whole period from about 1982 or when Volker Stevin began to go down, until, oh, 1989, we were just very busy doing a lot of different things. The significant ones I mentioned. We no sooner finished the super collider when Ray Leonard, who ran the Water Resources Congress, was asked by the Trade Development Program if WRC, as a nonprofit organization, could do a study of the water transportation system in Bangladesh.

I happened to be the chairman of WRC at that time. Ray was the only active person in WRC. So he asked me, and I said, "Yes, we can do it. I'll manage it." So we did that. We put together a team. We did a \$1 million study for the Trade Development Program of the State Department, and it was quite successful, I thought. WRC established itself as a competent organization to do engineering studies. EMSI was now recognized; WRC was recognized.

We found a great team for the Bangladesh job. General Jimmy Johnson, who had been deputy chief, was in charge of the field work. Jim organized the group that worked in Bangladesh. The results were impressive, and the WRC made a good impression on the World Bank.

About that time, I began working as an engineering adviser to Seltzer and Rosen, which was a law firm. Our thrust was to avoid claims. I've been working for them now for over four years.

So my retired career has been rather varied. I've left out a few things. I stayed active in PIANC and in USCOLD [U.S. Committee on Large Dams], and I became very involved with the Corps of Engineers Historical Foundation, which is now combined with the Regimental Association into the AEA. The AEA is important to the Corps. We need to have a grassroots organization of alumni and active-duty people in the Corps for a lot of reasons.

Then I've stayed very active in the Military Academy at West Point. I will always feel that I owe the Academy. My class gave a \$1 million gift to the Academy, a new main entrance facility. I was the chairman of that committee. It took from 1981 to 1993, a 12-year job, but we did it. We did all the concept engineering ourselves. We hired Burns and Roe to do the detail work, but all of the planning, the concept, the contract management, and the supervision of the work we did ourselves. I think the overhead was about 1.2 percent, but we put days and months and years of our lives in that thing.

Last, there is the National Academy of Engineering. I have served on the Building Research Board and have been involved in several studies over the last five-plus years. Presently I am on the Water Science and Technology Board [WSTB], which uses my experience nicely.

All in all, I've had a lot to do, and I guess it breaks out pretty much even into pro bono and paid. I really have been very pleased with the opportunities I've had since I retired. I haven't done as many significant things as others perhaps, but—

Q: I wanted to ask you about the teaching in China.

A: While teaching at the University of Maryland, I began to realize that the Chinese were going to do their own engineering and that they wouldn't mechanize as we had. The one area I thought we could help was in management of projects, organizing and conducting project management.

So I was able, through the University of Maryland, to get the East China Technical University in Nanking to set up an exchange. They invited us over to teach a course in construction management. Because of my Army background, I went to see General Richard Stillwell [retired] in the Department of Defense. He was involved in the international matters for the Secretary of Defense and became quite attracted to the idea. So I carried a Corps of Engineers

flag in one hand, the University of Maryland flag in the other, and took with me Dr. Mark Smith from the University of Maryland's construction engineering and management course. The three-week program went well and was underwritten for the following year. The next year the Corps provided Colonel Steve West, district engineer in Omaha, to fill my spot. The idea was that from then on the Corps of Engineers would become the prime mover in teaching engineering management to the Chinese. My belief was if we could get that done, even though the Americans may not get the construction contracts, the American management system would be adopted, out of which would come many benefits for the American construction industry and U.S. suppliers.

I didn't have enough power to keep it going. I just couldn't drive the thing hard enough. The Corps supported it the first year—the University of Maryland and the Corps together—but, as I say, I didn't have enough clout to keep it going. It's too bad because it had taken a yeoman's effort to get started.

Q: Were there classes in English or did you have a translator?

A: I had to use a translator. That was a major weakness.

Q: In retirement you've been, as we talked about last time, very involved with the University of Maryland. What about other academic institutions that you've been involved with?

A: My experience in construction management led to my being invited by quite a few universities in the United States and abroad to lecture on management and leadership in the engineering and construction field. I felt there was value in passing on to future engineers and managers important lessons that I had learned.

Now, besides the University of Maryland and the lecturing business, I also was asked and accepted a position on the board of advisors to the dean of engineering and mathematics at the University of Vermont. I have no affiliation with Vermont, but I know some people who do and they recommended me. I was accepted. I am happy that I did so. I've been working with them for about four years now.

The other area of academic activity has been the Association of Graduates at the Military Academy. While the Association of Graduates is not involved directly in academics, it is very much involved with all the activities at the Military Academy. Since that was my alma mater, I was delighted with the election to the board of trustees of the Association of Graduates and have been on that board for almost nine years. My term expires in the summer of 1998.

The Association of Graduates takes considerable effort—I am the chairman of a couple of committees, I've served on several others. I try to stay active because I think it's important that graduates of the Military Academy maintain a voice in the affairs at West Point, particularly those where the superintendent needs to hear from the alumni. The Association of Graduates does not function like an alumni group of most universities; however, it does have somewhat the same interests.

The Military Academy, a federal organization, is regulated by law and the military department; therefore, there are some distinct limits on the Association of Graduates. Nevertheless, the association does keep in contact with the students and cadets and has provided me with an opportunity to lecture to the cadets on management and on engineering, specific engineering problems. That became another facet in my association with academia, but if my background and experience are of value in the educational field, then I'm most anxious to offer it.

The University of Maryland paid me as a professor, but the lectures and the boards of the University of Vermont and West Point are not remunerative. In fact, they rarely pay expenses, but that's not the point. The reason I mention the financials is that it does distract from the things I do that generate money, which can be used to do the nonpaying work. So, as long as I can, I'll continue to participate in passing on, within academia, experiences and lessons I've learned. I see a need to develop leaders, not only of engineering but engineers who take leadership positions in government. We're not as well represented as we should be, and unfortunately many of our major construction companies are being managed by nonengineers.

Q: We discussed a little bit your involvement in other professional organizations, but I think there are several we haven't talked too much about, like PIANC and ICOLD. You've continued to be involved with professional societies, as well.

A: Well, yes. My experiences and associations while in the service with professional engineering organizations supported the logic of retaining my association with them. PIANC is one of my favorites. It's not an organization of people so much as it's an organization of countries, and therefore it's a very pleasant annual event when you go to the meetings and, every four years or so, to their congresses. You're really the guest of the country.

Aside from the social and the pleasantry aspects, the professional features are very good because PIANC is truly an outstanding professional organization. It's the oldest continuously operating professional organization. Its 50 country members are represented by individuals who are in important positions either in government or in the educational field in the area of water transportation and affiliated structures.

While the United States has the largest individual membership in PIANC, it also has one of the weakest organizational structures. That's been overcome in the last 15 or 20 years because of some good work by a few people. Dwayne Koch, the U.S. PIANC coordinator under the director of Civil Works in the Corps has kept PIANC activities in front of the membership and encouraged them to become more active. The U.S. has maintained a leadership position in the international organization—General Casey in the 1940s, General Holle in 1951, General Heiberg, Thordike Seville, to name a few.

One other thought on PIANC. I was elected as one of the first four international vice presidents. For years, there were no international vice presidents, but as the organization got bigger it became more difficult for the president to manage it. So the organization was redone, and Sir William Harris of Britain and I worked on that task. I was very pleased with having had a part in it, and also the results have been quite rewarding.

One interesting event occurred in the first year I attended in Sicily in 1972. We were so much in the environmental program back in the United States, and I made a motion that a commission be established to evaluate the effect of navigation structures on the environment. I did not get a single supporting vote outside of the U.S. delegation. No one felt the subject was sufficiently important to establish a commission, which means a four-year study.

The next year we had a congress in Ottawa, Canada, and early in the affairs the leader of the Russian group to PIANC came to me and said, "If you'd move again to establish a commission to evaluate environmental effects of navigation, our delegation will support you." So I boldly stepped forward and made the motion a second time. It carried unanimously. In the course of one year, something happened. In any event, PIANC became active and remains an active exponent of the environmental impacts of navigation structures.

Beyond PIANC, the large dams groups, USCOLD and ICOLD, were important professionally. I wanted to be a voice for the Corps in a different sort of way in these professional

organizations. I always felt some engineer officer should be good enough to be on the exec committee of USCOLD. That's never happened to my knowledge. They make the Chief of Engineers an honorary member, and I think that's so he can't have a voice on the exec committee. They also make some other people honorary members. On the other hand, the Corps has always been very well represented through our family of outstanding civilians. We've had several who ended up as the president of USCOLD—Lloyd Duscha and Dick Armstrong recently. I always felt that there was in the Corps of Engineers at least one officer of some rank who was technically qualified to be nominated for and make it to the exec committee, but it hasn't happened to date.

I became chairman of the Environmental Effects Committee of USCOLD and was responsible for the environmental program at the ICOLD conference in San Francisco in 1986. The previous International Committee on Large Dams' meeting in Europe was harassed greatly by the environmental group, "the Greens," they call them. We didn't want that to happen in San Francisco, especially since there was an environmental group meeting at the same time at Berkeley on the rain forest problem in South America. Several of us went to their meeting, which included some interesting presentations. The author of *Cadillac Desert* was a principal.

Q: Mark Reissner?

A: Yes, Mark Reissner. I had not seen him since his book was published. While the book was very critical of a lot of things and a lot of people, it was not critical of me personally. I wanted to let him know I was present because I was interested in having some of those present at his meeting attend a joint workshop at the ICOLD meetings.

The joint meeting at ICOLD was a little stormy, but still it was managed and came off pretty well. Unfortunately, shortly after the congress, I had to ask to be replaced as chairman of the Environmental Effects Committee because of personal problems—well, not problems. Gerry had a hip replacement, and I just didn't feel that I could do all the running around at the time, so I asked Lloyd Timblin of the Bureau of Reclamation to take over. He has done a great job since then.

Having been a past national president and having recommended and financed the annual sustaining member award, the Society of American Military Engineers [SAME] still attracts much of my time. It deserves it. I try to go to all the annual meetings. Both Gerry and I enjoy seeing so many friends. I take some pride in the results of energizing the sustained membership in 1976. SAME climbed from 250–300 sustaining members to about 3,000, and that's really been the injection of talent, knowledge, and leadership that's made the SAME so much more attractive to the young engineers, civilians as well as military.

I don't know how to say enough for Walt Bachus's leadership and good work. He changed SAME from mostly a social outfit with a rented downtown office into an organization that's quite active in the technical field and owns its own fully paid-for building in Alexandria. SAME puts on a great annual meeting. I've been urging them to have annual meetings in Washington so the sustaining members can get direct input from the Congress and the leaders of the country. In return, our engineering talent needs to be seen and heard more. That goes back to the idea of having better engineers in leadership positions. I think SAME can be a factor. Having the annual meeting in Washington will cause improvement in that field. Actually, the annual meeting should be in Washington—it's a national meeting—if not each year, then every third or fourth year.

Then there are the water organizations. Actually, there are about three of them. I was the first president of the National Waterway Foundation. It was set up to provide grants and not to be outwardly active. We published a book called *Waterway Productivity*. It's a good book. The National Waterway Foundation is a passive sort of organization. It does not have members.

The Water Resources Congress, like so many water organizations, is having a hard time because the interest that supports it has been moved into other areas. Business can't support too many organizations, so it's a challenge for the Water Resources Congress to find a new field to supplement its previous areas of grandeur.

The other activity that's taking a lot of time is the Corps of Engineers Historical Foundation, now the Army Engineer Association, which was covered earlier.

Q: You've also been involved with the National Academy of Engineering, too, isn't that right?

A: Yes. The Academy—I was honored by election to the Academy in 1977, and for the first several years thereafter I was not involved too much. About six years ago I joined the Building Research Board of the Academy. The Academy has boards and committees. Normally there are two or three members of the Academy on a committee and the remaining members serve from industry based on their professionalism and desire to service the Academy.

The Building Research Board is financed, in large measure, by the Federal Construction Council, which is made up of the federal agencies involved in the construction business including the Corps, the Navy, the Air Force, the Smithsonian, the State Department, the Postal Service, the General Accounting Office, et cetera, et cetera.

Service with the Academy is another effort to return to society some of the lessons learned at public expense while in the Army and since I retired. I've enjoyed my activities in the Academy. As I said earlier, I also serve on the WSTB. A current WSTB study concerns flood protection for Sacramento.

The Building Research Board has looked into the responsibility of the architect-engineers in the construction phases of contracts. Previously the board published a report on the value of inspections to quality. We analyzed the need for mega-projects and if there could be mega-projects in the future because of the constraints from environment, funding, and local cooperation, et cetera, for major projects. Could we put a man on the moon? I think the super collider is probably evidence of the problem because it's now been stopped, not because of the project itself but because of financial considerations.

All the pro bono effort when put together adds up to about a third of my time, at least three to four months a year spent doing things that are directly related to passing on knowledge, if you want to call it that, or to repay an obligation to my benefactors through the contributions of my knowledge and experiences.

Q: Recently the Army Engineer Association has taken up a bit of that time.

A: Yes, that's been a great demand lately. I was the originator of the Corps of Engineers Historical Foundation. I was on the board and later the chairman at the very end. The Army Engineer Association is important to me because of my role in getting the structure, the charter, and the bylaws taken care of. I asked not to be put on the new AEA board. On the other hand, President Chuck Fiala did ask me to be chairman of the Policy Committee. Once all this levels out, my role will be to try to market the considerable value of this association.

When I get to the point where those extracurricular things seem to be more important than the consulting work, I'll retire like everybody else does.

Q: I was going to ask you that. Is there any thought of "retiring" again?

A: Well, yes. I think of it frequently, and it depends on the personal situation. Unfortunately, Gerry's had a lot of problems the last five or six years with arthritis, and as I mentioned, her hip replacement. Besides, she's had both corneas replaced in her eyes. Those were serious operations. She's had three operations on her foot to try to eliminate the pain when she walks. Also she's had one joint in one finger, her index finger on her right hand, worked on. So I'm hoping that after this current surgery she'll be mobile, but we're reaching the point pretty quick where I think we should devote ourselves to each other. Still my work gives us diversity. It allows us to travel some, which we otherwise might not, but there's no question where the priority is. The priority is at home. When I have to choose, that's where I'll go full time. Also, as an individual I am becoming less attractive in the business arena. You asked did I ever think about it. Yes, I think about it a lot. Gerry and I have pretty much agreed that as long as I can continue to get around and do some good things and as long as she's healthy, our present arrangement is best. She wouldn't know what to do with me at home anyhow.

She spends most of the summers in North Carolina at our beach place where I have a fax machine, a copier, and so forth. I can do my consulting and board work from North Carolina as well as here in Virginia. Helen Sari, my secretary, keeps my local office open and handles the administration. I fax letters for her to type, et cetera. She is a wonderful person who has become a good friend to Gerry and me.

Q: Have you found in the last few years that you're doing more pro bono work?

A: Yes. It grows and grows. I had a very good friend who retired as a flag officer and his policy was not to do anything he didn't get paid for. That's okay. If you do that, you're probably going to make a lot more money. My feeling, as I mentioned a couple of times, is slightly different. I just felt that I could be of value to the future by putting my experiences to work in fields which often are of a pro bono nature, like the Academy of Engineering, the Association of Graduates, the University of Vermont, and so forth. Of course, the water organizations. That's my background, navigation and water, so I serve on them, and it's a labor of love. There's no altruistic objective there. So as time goes on, it seems that I've gotten more committed, but I think that's going to change because next year I am also going to curtail my activities with the Academy of Engineering and the University of Vermont.

To answer your question clearly, I believe when I first retired I was so interested in finding an occupation that I didn't pay much attention to the pro bono work. Then, once I settled in and became comfortable with the fact that I was going to be able to survive financially, I began to do more and more pro bono work. It's now reached a peak probably, and it'll wane in the future. I've enjoyed the effort, don't misunderstand me. It's not a one-way street, and I have no regrets in any way. I wouldn't want this record to reflect I have. I've enjoyed the pro bono work, and I've met some wonderful people. I am not sure a person can make more money if he avoids pro bono efforts. Actually, some of my consulting work has resulted directly from my exposure at the National Academy of Engineering.

Q: Looking back over the 16 years of your retirement, you've been involved in a large variety of activities and projects and various kinds of work. Perhaps we could wrap up this segment of the interview by summarizing the types of activities you've been involved in during the last few years.

A: I would say that the first general comment is I was interested in being involved in a lot of things. I just think that's my nature. The higher I went in the Corps, the more I enjoyed my

work because I had broader areas of responsibility and I seem to do better when I have a lot of irons in the fire, instead of just one thing. I'm not a specialist, I guess, by nature. So when I retired, my first priority, as I have just mentioned, was to find a job that sustained my income equivalent to my service income plus a little more. So the startup was basically to double my retirement income.

The next area of concentration, I would say, would be in the professional organizations that related to my work and to my past. That brought in the water resources and environmental activities, the professional organizations like the military engineers and civil engineers, USCOLD, PIANC, and then, finally, the Academy of Engineering. Somewhat overlapping the second group were just the pro bono things that I do like advice to the University of Vermont and the Association of Graduates of the Military Academy, lecturing at various places, the Army Engineer Association.

The main thing is that I'm really doing the things I like to do. Occasionally I'll get a contract with a firm to do something that I end up not feeling too comfortable with, so then I usually tell them that they should drop me. I've done that two or three times. So that's how it breaks out. The job, then the professional societies, and finally the pro bono things. That's the sequence.

Q: What about your relationship with the Corps of Engineers since you've retired?

A: Basically you're asking about the official relationship or business relationship. Well, the field that I've chosen to work in since I retired is a field in which the Corps is also quite active, i.e., engineering and construction. I have felt constrained by law and also by my conscience that I should not promote a company which employed me with the Corps of Engineers. I never did that. The first five or six years I had little or no association with the Corps in any way except socially. General Bratton and General Heiberg continued a practice that had started with General Fred Clarke, and that was to have lunch about once a month with the previous Chiefs and just talk about things. The Chief has a pretty lonesome job and needs somebody to talk to. Other than that, I didn't see much of the Chiefs. The current Chief never needs an old Chief of Engineers poking around or telling him how to do his job. I went to the Christmas parties when I was invited, and I went whenever possible to the update that the Chief gives to the retired people.

I explained to the people who employed me they could not expect me to promote them to the Corps. One very large local company became quite upset that I wouldn't try to get work for them. I refused to do that and asked that my contract be terminated.

Exceptions arose when I found the Corps was being criticized or heading into trouble in an area. For example, district engineers or contracting officers are accused of not talking to contractors. That led to general comments that the Corps is hard to work with, is unfair, or whatever. So when I'd hear things like that, I would make a point of enlightening the Chief.

On the other hand, I always wanted to be available to the Chief in case of any problem. General Williams has been a little different from General Hatch, as I recall. General Heiberg was similar to General Williams in one sense, and that was if he had a problem I could help him with, he'd call me, and I like that. Later, more recently, however, I've been a lot more involved with the Corps, particularly through the Academy of Engineering. I've known General Williams personally since Vietnam. He's easy to talk to—a very fine man. So I probably am a little more active today.

Of course, as time goes by, your constraints lessen, and you're no longer a factor in Corps policies. I think retired Chiefs can be of value to the Corps. General Clarke certainly was a

great help for me. I have offered and encouraged a similar arrangement with the Chiefs. If they need me, fine, but I've tried not to become a nuisance.

I called Kansas City the other day for something, and the lady that answered the phone said, "Oh, I remember you when you were division engineer in Omaha." We had a long conversation. I enjoyed it a great deal, but that's very unusual. It doesn't take long for Chiefs to become has-beens. And that's good too! All retirees have the same situation—I believe they should nourish becoming "has-beens" unless needed.

Q: In recent years you have received a number of awards, including the prestigious Founder's Award from the National Academy of Engineering. Tell me about those awards.

A: I guess if you live long enough and remain active, you will receive awards. In my case there has been a small flood lately. The Beaver's Engineering Award, the Construction Industry Institute Award of Excellence, the National Academy of Engineering Founder's Award, the Gold de Fleury Medal from the Army Engineer Association and the Distinguished Engineering Alumni Award from the University of Iowa in February 1998. In March 1998 the Society of American Military Engineers selected me for their Golden Eagle Award. Finally in May 1998 the Association of Graduates of the United States Military Academy gave me a Distinguished Graduate Award during a parade of the Corps of Cadets as part of the annual alumni program. Each is for a different field and a truly outstanding recognition, so I would not want to compare or select a favorite. I can say, however, that the National Academy of Engineering's Founder's Award and the Distinguished Graduate Award were the most unexpected and have been received by some great Americans. I am honored and humbled by each and really wish everyone who helped me over so many years could, in some way, share and enjoy these acknowledgments. After all, only because of them were the awards given to me. No one can achieve these accolades by himself, and nowhere is this truer than in the Corps of Engineers and our industry.

Conclusion

Q: What do you see in the future for the Corps of Engineers?

A: A tough subject, which has concerned me since 1970. Most of my thoughts apply to USACE [U.S. Army Corps of Engineers] primarily. One thing is clear—as General Heiberg said recently, "The Corps' future will be different." The truth of this statement comes into better focus when I reflect on the Corps of Engineers I joined in 1943. At that time, the Chief of Engineers was the commander of all engineer soldiers and was responsible for Fort Belvoir, the Engineer Center. He assigned all officers in accordance with his career development policies, and he was responsible for the traditional engineer staff and engineer construction missions to include the politically sensitive public works program.

Beginning in the early 1960s, a series of Army reorganizations, personnel management changes, and other modifications steadily reduced the scope of the Chief's responsibilities and authorities to their present level. The USACE, established in 1979, consolidated under the Chief of Engineers, as commander, those functions that survived and remained under his jurisdiction.

While the basic role and purpose of the Chief and his command to support the Army have not changed, the Corps today is much different than it was a few years ago.



David J. McGrath, publisher of Engineering News-Record, congratulated General Morris after ENR named him "Construction's Man of the Year" in New York on 16 February 1977 at the Pierre Hotel.

As for the future, changes will continue. I am inclined to believe the reductions in responsibility and authority of the Chief of Engineers have reached a low point, and future modifications will begin an upward adjustment. This swing of the pendulum depends on the reversal of a trend which began three decades ago and apparently has become more serious in the last half of the period.

Q: Can you define this trend more clearly?

A: Yes, but first I want to establish the essential point that all short-term or specific action gains must be within the framework of the bedrock goal of "improving the support by the Corps of Engineers to the Army."

Q: What about the public works program of the Corps?

A: Chiefs of Engineers and most senior generals of the Army realize that the world's finest military engineer capability is in the U.S. Army because of the added value generated through the professional practices demanded by the civil works program—especially in peacetime. The trick for the Chief is to convince his military superiors that such is the truth. The Chief needs help and support, similar to that which I had, from the Chief of Staff and the Secretary of the Army. This comes from personal, frequent contact and involvement.

Q: All right. Back to the trends over the past 30 years or so.

A: As I see the past from a distance and through the veil of retirement, there appear to be several events which singularly and collectively have diluted the capability of the Chief of Engineers and his command (USACE) to fulfill their role of service to the Army in war and to the nation in peace.

Professionalism has softened steadily within USACE as—

- ▶ The Board of Engineers for Rivers and Harbors was abolished.
- ▶ Technical job prerequisites were broadened to attract nontechnical applicants to positions traditionally filled by engineers.
- ▶ Contracting authority has been removed from the district commander unless he or she branch transfers. As a consequence, the commander is denied a key command-and-control element essential in executing his responsibilities.
- ▶ In-house engineering continues to give way to engineering by contract.
- ▶ Army career-development programs for the military have progressively favored repeated troop service to the disadvantage of and disservice to USACE and in the number and qualifications of general officers chosen for Corps roles.
- ▶ A cultural change has occurred as the civil program trended away from *development* of resources toward *management* of resources. Even so, some development will always be in the mix of tasks.
- ▶ Operation and maintenance budgets now exceed the construction budget, and for the foreseeable future, environmental and operational matters will continue to capture the lion's share of both the military and public works budgets.
- ▶ The appreciation and support of the Corps of Engineers within the Congress has declined from all outward appearances. USACE has seen several of the most knowledgeable and supportive members of Congress leave that body in the last few years.
- ▶ The increasing demands of the Assistant Secretary of the Army for Civil Works on the time of the Chief of Engineers have reduced the Chief's time for his top-priority mission to support the Army. As a consequence, the historic, deep-seated, and widely spread lack of understanding and appreciation of the importance of the civil program within the uniformed Army has been aggravated and intensified. Having been directly involved with the assistant secretary's office during the first seven years of its operation and a close observer for the past 17 years, I believe this element of the secretariat needs to be evaluated in detail for composition, purpose, need, and possibly combining with another assistant secretariat such as Installations and Environment. I do not question the value of the ASA/CW office in the political arena and with Congress and senior elements of the Executive Branch. On the other hand, the ASA/CW currently has only one activity and one command to address. As a consequence, like a mother hen with one chick, the assistant secretary becomes overly involved in the internal activities of USACE. Over the years, this involvement has had the unexpected and unintended impact of reducing the Chief's time for supporting the Army. Both USACE and the U.S. Army suffer.



The Association of Graduates of the U.S. Military Academy presented General Morris (center) with the Distinguished Graduate Award along with MG Adrian St. John II (Ret.) (left) and MG Michael Collins (Ret.) (right) in 1998. (Photo courtesy of Assembly, Roger Pettengill, Academy Photo.)

- The importance of the Chief of Engineers and USACE suffered a major setback when many of the duties of the Assistant Chief of Engineers were assigned to a new DA staff element. The reasons for this move are not clear to me, but the effects seem clear.

Of course, there have been other developments which are more positive and provide the basis for my observation that the pendulum will swing in a direction more favorable to the Chief of Engineers and USACE.

- The civilian staff within USACE remains outstanding and must continue to be so, for herein lies the strength of USACE.

- ▶ Within the engineering construction community, the Corps remains highly regarded; however, there is a noticeable rise in dissatisfaction with the new contracting officer situation.
- ▶ Major reductions in end-strength and budgets have placed pressure on military post commanders responsible for a well-maintained and smooth-running installation. This is an opportunity for USACE to support the Army.
- ▶ The growing role of the U.S. military in international peacekeeping magnifies the importance, value, and opportunity for engineers on the Army team.
- ▶ As indicated earlier, the basic missions of the U.S. Army Corps of Engineers have not changed.

Q: So there seem to have been some good as well as some bad events over the past years?

A: Yes, that is true, but collectively the effect has been to weaken the Corps significantly. Within the positive aspects, however, lies the basis for future growth in the Corps as we know it. So long as our mission, our reputation, and our civilian staff remain intact, the opportunities seem ripe for the Chief and his command to become the strong arm of the U.S. Army in nation building and in the operation and maintenance of military facilities.

I believe these opportunities can become reality if—

- ▶ The overarching goal of the Chief and his entire command is in fact and by appearance, “Support to the U.S. Army.”
- ▶ Near-term actions successfully reverse the events which, over time, have diluted the capability of USACE to fulfill its role and which challenge the Chief of Engineers’ ability to influence DOD and DA policy and activities. Crucial is the need to restore contracting authority to district commanders. Failure to do so may well lead, in due course, to the elimination of military personnel in these positions. Also important are improving the career patterns of rising officers and the selection ratio of general officers for USACE, developing a personal and direct relationship with the Secretary of the Army and the Chief of Staff, and restoring the purposes and effectiveness of the ACE’s shop.

In simpler terms, this relates to improving the authorities and training of the military leadership within USACE and the influence of the Chief of Engineers outside USACE.

In summary, the commander of USACE has an unusually good opportunity to move himself and his command into a stronger and more meaningful position in the U.S. Army over the near term (3 to 5 years). The current Chief has my best wishes, for if he is unable to make the short-term adjustments during his tour, I am afraid the pendulum will be stuck for a long time. Essayons!

One final thought relates to marketing the Corps and USACE especially. In many ways USACE is a business and must promote itself to attain the highest level of customer satisfaction and to generate new customers. Of course, doing a good job is *the* essential element, but in today’s fast-moving world, this alone is not enough to sustain, much less “grow” the business. An aggressive, multifaceted communications and public relations program including a little “tub-thumping” is in order at all times. In this regard, the fledgling Army Engineer Association and its *Army Engineer Magazine* provide a new and valuable means to draw the entire engineer family together—troop units and USACE, civilian and

military, retired and active—and to broaden understanding within the U.S. Army. An excellent asset.

Now I can ask a question: “What is left to discuss?”

Q: That is about it, unless you have something more.

A: There are two final thoughts:

First, my entire career has been blessed with good fortune and great assistance from outstanding men and women. None was more important and supportive than my immediate family. My wife, Gerry, was 100 percent devoted to helping me during more than 37 years of Army duties, and our two children, Susan and John, were more interested and involved than I realized at the time. The three of them not only allowed me to focus my attention on the work of the Army, but encouraged it.

Now, in closing, a final word about the Corps. We read a great deal about leadership—both corporate and military. The libraries are full of publications on the subject. The students of organizational effectiveness need look no further than the U.S. Army Corps of Engineers for the best example of an agency which has served the U.S. Army, the United States, and the world with great success and effectiveness for 200 years. Its personnel make it so and will keep it so.

Acronyms

ABDA	Arkansas Basin Development Association
ACE	Assistant Chief of Engineers
ACE	Armored Combat Earthmover (M-9 ACE)
AEA	Army Engineer Association
AFRCE	Air Force Regional Civil Engineers
ASA/CW	Assistant Secretary of the Army for Civil Works
ASA/I&L	Assistant Secretary of the Army for Installations and Logistics
ATC	Ashland Technology Company
BASS	Bass Anglers Sportsmen Society
C&GSC	Command and General Staff College
CCC	Civilian Conservation Corps
CERL	Construction Engineering Research Laboratory
CEV	Combat Engineer Vehicle
CG	Commanding General
CINC	Commander in Chief
CPAR	Construction Productivity Advancement Research
CRREL	Cold Regions Research and Engineering Laboratory
D.C.	District of Columbia
DA	Department of the Army
DMZ	Demilitarized Zone
DOD	Department of Defense
EIS	Environmental Impact Statement
EMSI	Engineer Management Services, Inc.
EPA	Environmental Protection Agency
EUD	Europe Division
FEMA	Federal Emergency Management Agency
HUD	Housing and Urban Development
ICOLD	International Committee on Large Dams
L&N	Louisville and Nashville Railroad
LOC	Lines of Communication
LST	Landing Ships, Tanks
MASH	Mobile Army Surgical Hospital
MOS	Military Occupational Specialty

MRD	Missouri River Division
NATO	North Atlantic Treaty Organization
NCO	Noncommissioned Officer
NEPA	National Environmental Policy Act
NORAD	North American Air Defense Command
O&M	Operation and Maintenance
OCE	Office of the Chief of Engineers
OMB	Office of Management and Budget
PCS	Pavement Consultancy Service
PIANC	Permanent International Association of Navigation Congresses
R AND U	Repairs and Utilities
ROCID	Reorganization of Combat Infantry Division
ROTC	Reserve Officer Training Corps
SAME	Society of American Military Engineers
SHAPE	Supreme Headquarters, Allied Powers, Europe
SOP	Standing Operating Procedure
TO&E	Table of Organization and Equipment
TOW	Tube Launched, Optically Tracked, Wire Guided
UET	Universal Engineer Tractor
USACAV	U.S. Army Construction Agency, Vietnam
USACE	U.S. Army Corps of Engineers
USAID	U.S. Agency for International Development
USAREUR	U.S. Army, Europe
USASTAF	U.S. Army Strategic Air Force
USCOLD	U.S. Committee on Large Dams
USED	U.S. Engineering Department
USMA	U.S. Military Academy
WES	Waterways Experiment Station
WRC	Water Resources Congress

Index

A

ABDA. *See* Arkansas Basin Development Association
 Abdullah, Prince, 173
 Abernathy, Ralph, 68
 Abrams, General, 79, 112–113, 144
 ACE. *See* Assistant Chief of Engineers
 Acronyms, 221–222
 Adams, Brock, 149
 Adams, Carroll E., Jr. “Hap,” 72, 74
 Advanced management course, 64–65
 AEA. *See* Army Engineer Association
 AFRCE. *See* Air Force Regional Civil Engineers
 Air-conditioned vehicles, 59–60
 Air Force
 construction projects, 156
 housing construction, 30–31, 88–89
 Air Force Regional Civil Engineers, 156
 Alaskan earthquake, 57
 Alaska Pipeline project, 105
 Al Batin District, 173–174
 Albert, Carl, 49–50, 54, 57, 91
 Alexander, Clifford, 131–135, 144, 149–150, 200
 Anderson, Andy, 81, 87
 Anderson Air Force Base, Guam, 14, 16
 Andrus, Cecil, 133
 Arkansas Basin Development Association, 50, 59, 87
 Arkansas River
 project, 50–53
 salt study, 53–57
 Armogida, S.A., 23–24, 30
 Army construction projects, 30–31
 Army Engineer Association, 198, 208, 212, 215, 219
 Army-Navy game, 62
 Army Real Property Management Program, 139, 154
 Army War College, 45–46, 60
 Arrowhead Lake Recreation Facility, 57
 ASA/CW. *See* Assistant Secretary of the Army for Civil Works
 ASA/I&L. *See* Assistant Secretary of the Army for Installations and Logistics
 Ashland Technology Company, 207–208
 Assistant Chief of Engineers, 120, 122, 139–140, 142–143, 185, 202
 Assistant Secretary of the Army for Civil Works, 97–98, 113–114, 121, 146–148, 217

Assistant Secretary of the Army for Installations and Logistics, 148
 Association of Graduates, 209, 213–215
 Audubon Society, 101, 193
 Awards, 215

B

Bachus, Walt, 120, 128, 156, 184, 211
 Badger, Bill, 153
 Bag boy situation, 66
 Bagnulo, Aldo H., 37
 Baldwin, Jess, 205
 Baldwin, William C., iv, vii–viii
 Balentine, Yvonne, 117
 Ballard, Joe, 76
 Ballistic Missile Command, 183
 Ballou, Ken, 112
 Barracks design, 88–89
 Bartek, Ronald, 73
 Beck, Chris, 99
 Beckman, Don, 86, 113
 Bellmon, Henry, 51, 53, 56, 125, 207
 Bennett, Donald, 62–63
 Benning, Bob, 106, 128
 Berge, Woody, 128
 Betts, Jim, 14, 19
 Bevill, Tom, 115
 Bicentennial program, 106–107
 Bixby, George, 16
 Blakefield, Bill, 42
 Blakeley, Bob, 142, 172, 199
 Blakey, Lew, 96
 Blaylock, Charles, 156
 Blumenfeld, Mike, 97–98, 131, 144, 146, 200
 Board of Engineers for Rivers and Harbors, 118–119, 122, 194, 217
 Boland, Bill, 58
 Bolling, Bud, 71
 Bonneville project, 191–192
 Booth, William, 63, 74
 Boswell, James, 165
 Boswell Dam, 54
 Bowbells, North Dakota, 22–23
 Boy Scouts of America, 5, 55
 Bratton, Joseph, 162, 200–203, 214
 Britton, Frank, 42, 44
 Brotsman, Bill, 104
 Bruckner, Robert, 166
 Bryson, John, 111, 195
 Buffalo, Oklahoma, 56–57

- Buffalo District, 150, 152
Building Air Bases in the Negev, 178
Building Research Board, 208, 212
Bunch, Jim, 46
Bureau of Reclamation, 49, 187, 211
Burnell, Bates, 128, 142, 175, 179
Bush, Command Sergeant Major, 41
- C**
Cadillac Desert, 211
Caldwell, Joe, 96
Callaway, Howard "Bo," 114–115
Camm, Frank, 157
Camp David agreement, 154, 174
Cannon, Howard, 68
Cannon, John L., 163
Career summary, ix–x
Carhart, Thomas, 63
Carlisle Barracks, Pennsylvania, 46
Carlson, Frank, 50
Carney, Thomas P., 61
Carter, Jimmy, 126, 129, 131–138, 141, 149, 154, 183, 200
Casagrande, Arthur, 163
Casey, Hugh, 15–17
Cassidy, Mike, 87
Cassidy, William, 47–49, 109
Cavalry Division, 1st, 40–45
Central Oklahoma project, 53–54
CEVs. *See* Combat engineer vehicles
C&GSC. *See* Command and General Staff College
Charleston District, 141
Chatfield Dam, 85, 104
Chávez, César, 68
Chief of Engineers
 civil works projects, 185–204
 internal and external relationships, 124–165
 military projects, 166–185
Childhood, 3–5
China, 153, 162, 166–171, 208
Civil engineering degree, 18–21
Civil Works, Director of, 91–114
Claims issues, 58
Clark, James, 206
Clarke, Frederick, 73–74, 77, 79–80, 85, 90, 92–93, 97–98, 100, 105, 111, 121, 125, 142, 147, 161, 164, 176, 198, 214
Clark Hill Dam, 28, 31, 89–90
Clean Water Act, 98–100, 108, 186
Clements, William, 176–177
Clifton, Jack, 177
Cochran, Charles A., 75
Cold Regions Research & Engineering Laboratory (CRREL), 162, 166
Collins, Michael, 218
Combat engineer vehicles, 43
Comenose, William, 74
Command and General Staff College, 30, 32–33, 39
Community relations, 56
Connell, Dick, 46
Construction Engineering Research Lab (CERL), 122, 155, 162
Construction projects
 Goose Bay, Labrador, 33–37
 hospitals, 156, 184
 Israeli airfield project, 154, 174–175, 178–183
 Missouri River Division, 85, 88
 Saudi Arabia, 155, 171–178
 Vietnam, 71–72, 75–77
Contract management, 147–148, 175–176
Cooper, Ken, 95, 119–120, 156, 184
"The Corps Cares" buttons, 82–83, 87, 90
Corps Vignettes, 197
Costanza, Al, 99, 206
Costle, Doug, 98, 162
Cowboy Hall of Fame, 57
Coy, Bob, 36
Cross, Freeman, 42, 114–116
Cross-Florida Barge Canal, 104–105
Curl, Dick, 181
Currier, Roger, 66
Curry, William, 40
- D**
Daly, Leo, Sr., 89, 172
Dam safety inspection program, 106, 136–137
Daniels, Father Richard, 60
Danora, 28
Davison, Mike, 61
Dawson, Bob, 146, 171
Decorations, xi
DeGeer, Myron, 49, 56
Delbridge, Norman, 119, 183
DeMateo, Frank, 153
Department of Energy, 161–162
Department of State, 162
Deputy Chief, Legislative Liaison, 65–70
Deputy Chief of Engineers, 114–124
Deputy Commandant, U.S. Military Academy, 62–64
DeQueen, Arkansas, 57
Dickey, Ed, 95, 147
Dillard, Jack, 63, 74, 76, 79
DiMatteo, Frank, 36
Director of Civil Works, 91–114
Dirkes, Francis, 8, 10–11, 19
Dirksen, Everett, 68
District Engineer of Tulsa, Oklahoma, 46–60

Division Engineer, Missouri River Division, 79–91
 Dodge, Charles, 42, 44
 Dodge, Roy, 44
 Dola, Steve, 95
 Dolphin, Harry, 82–83
 Domenici, Pete, 191
 Donnelly, Tom, 95, 205–206
 Donovan, Jim, 72, 76, 119
 Dorman, Al, 207
 Dorn, Nancy, 147
 Drake-Merritt, 36
Dredging Is for the Birds, 100–101
 Dredging program, 100, 188, 193
 Duke, Charles, 33–34, 78
 Dunn, Carroll, 34, 50, 53, 59
 Durham, Chuck, 89–90
 Duscha, Lloyd, 90, 96, 166, 169, 211

E

East Academic Building, West Point, 67
 East China Technical University, 170, 208
 Eastern Ocean District, 33
 Edelman, Lester, 99
 Edgar, Ernie, 72, 95
 Edmonson, Ed, 50
 Education
 summary, xi
 University of Iowa, 18–21
 University of Pittsburgh, 62, 65
 U.S. Army Command and General Staff College, 32–33
 U.S. Army War College, 45–46
 Western Maryland College, 3–5
 West Point, 3–13
 Egg-Lotti, Charlotta, 27
 Egypt project, 103, 153, 158, 174
 18th Engineer Brigade, 71–79
 8th Engineer Battalion, 40–45
 EIS. *See* Environmental impact statements
 Eisenhower, Dwight, 32, 171
 Eisenhower, John, 32
 Eister, Don, 44
 Elder, John, 78
 Elkey, Robert W., 74
 Ellender, Allen, 50
 Ellis, James N., 176
 Emergency Operations Center, 164
 EMSI. *See* Engineer Management Services, Inc.
 Endangered species, 84
 Energy conservation program, 155, 196
 Engineer aviation battalions, 13–14
 Engineer Aviation Unit Training Center, 3d, 11, 13
 Engineer equipment, 184–185

Engineering and Construction Directorate, 140
Engineering News-Record, 216
 Engineer Management Services, Inc., 207–208
 Engineer Officers Advanced Course, 21, 143
 Engineer School. *See* European Command Engineer School
 Engineer Studies Group, 194–196
 Engineer Topographic Laboratory, 185
Engineer Update, 160
 Environment Advisory Board, 100
 Environmental Effects Committee, 211
 Environmental impact statements, 84, 118, 155
 Environmental programs
 Army program, 122–123
 Civil Works, 96–114, 185
 on military installations, 155, 195–196
 Missouri River Division, 81–82, 84–89
 Tulsa Engineer District, 55
 Environmental Protection Agency, 87, 97–98, 100–101, 108, 113, 161–162
 EPA. *See* Environmental Protection Agency
 EUD. *See* Europe Division
 Eufaula Dam, 51–52
 European Command Engineer School, 23–26
 Europe Division, 119, 178

F

Facilities Engineering Directorate, 120, 140, 184
 Facilities engineer program, 156
 Faisal, Prince Nasir, 172–173
 Family history, 3
 Far East Air Forces, 15
 Fay, Spofford, and Thorndyke, 36
 Federal Construction Council, 212
 Federal Emergency Management Agency, 92, 94, 164, 195–196
 Federal Water Pollution Control Act amendments, 96, 98
 FEMA. *See* Federal Emergency Management Agency
 1st Cavalry Division, 40–45
 Fisher, George, 83
 Fliakis, Perry, 156
 Flood control, 188
 Flowers, Walter, 114–116
 Flynt, Jack, 114–115, 134
 Foley, John V., 160
 Ford, Gerald, 115, 125
 Ford, Jack, 97–98, 146
 Forrestal Building, 141–142, 153, 161
 Fort Belvoir, 13, 21, 23, 26, 39, 120, 131, 198, 215
 Fort Benning, 28, 30, 115, 195
 Fort Campbell, 184

Fort Carson, 81, 85, 156
Fort Gibson, 54
Fort Lawton, 13
Fort Leavenworth, 23, 30, 32–33, 38, 81, 85
Fort Leonard Wood, 76, 81, 85, 89, 198, 201
Fort McKinley, Manila, 15, 20
Fort McNair, 125, 144, 155
Fort McPherson, 28
Fort Myer, 125, 200
Fort Peck, 84, 86, 90, 113, 144
Fort Riley, 81, 85
Fort Stewart, 30
Free, Richard H., 50
Freeman, Dave, 166, 169–170
Fritzinger, Willard, 25
Fulbright, J. William, 50
Fuller, Jim, 90
Funeral arrangements, Robert F. Kennedy, 67–68

G

Gap Filler sites, 37
Garrett, Lee, 116, 183
Garrigan, Tom, 160
Garrison Dam, 90
Gay, Ted, 199
Geesay, Ted, 129
General Officers Branch, 40
George, Walter, 31
Gianelli, William, 98, 146
Gibson, Ed, 38
Gilkey, Jack, 181–182, 191
Gillham Dam, 53
Glasgow, William A., 8, 143
Goose Bay, Labrador, 33–37, 45, 47–48, 57, 60, 70, 79, 153
Graduate school, 18–21
Grand River Dam Authority, 54
Graves, Ernest, 11, 114, 128, 130, 132–133, 146, 179
Gray, George, 116, 172
Gribble, William, 97–100, 106, 111, 113–114, 116–128, 153, 161, 184, 199, 201
Griffith, Harry, 72–73, 201
Groves, Richard, 92–94
Guam, 14–16, 26
Guest, Jim, 33–34
Gurney, Mark, 95
Guthrie, Oklahoma, 57
Guy F. Atchinson, 180

H

Haig, Alexander, 62–63, 177
Hallock, Duncan, 44
Hamblen, Arch, 165

Hambrick, Frances, 29
Hamner, Becky, 99, 108
Hamner, Steven, 38
Harbridge House, 55
Harris, Fred, 51
Harris, Patricia, 166
Harris, Sir William, 210
Hartwell Dam, 28, 31
Hatch, Henry J., 71, 163, 214
Hawthorne, Major, 42
Hayes, Thomas, IV, 63
Hays, Jim, 77
Hébert, Edward, 67
Heiberg, Vald, 75, 99, 110, 146, 163, 165, 171, 210, 214–215
Helms, Dave, 47, 53, 59
Hennessy, Dick, 33, 37, 39–40
Hepatitis, 42
Heuvelmans, Martin, 105, 160
Hicklin, Tom, 95
Historical Foundation, 196–198, 208, 212
“Hit list” of water resource projects, 132–133
Hoey, Wayne, 42
Hoffman, Martin, 125, 148–149
Hoisington, Elizabeth, 165
Holland-American Industry Group, 205
Holle, Charles, 28, 30, 210
Hollings, Ernest, 141, 150
Hospital construction, 156, 184
Hottenroth, Jim, 12, 15–16
Housing and Urban Development (HUD), 103, 162, 166
Howard, Newman, 72
Hruska, Roman, 85, 193
Hubbard, Marie, 15
Huffman, Jeanine, 95, 128
Humphreys Engineer Center, 127, 140–141
Hunter, Bob, 55
Hunter, Marilyn, iv
Huntsville District, 141
Huntsville educational facility, 111, 194–195
Hurricane Agnes, 91–94, 107
Hutchinson, Kansas, 56
Hydropower study, 187

I

ICOLD. *See* International Committee on Large Dams
Indian Bend Wash, 187, 192
Indian Nations Council, Boy Scouts, 55
Ingwersen, Glenn “Dutch,” 8, 14, 18–20
International Committee on Large Dams, 136, 157, 210–211
International navigation projects, 102–103

International Projects Office, 153–154
 Islen, Don, 156
 Israeli airfield project, 154, 174–175, 178–183
 Italy program, 116
 Itschner, Emerson, 19, 38–40, 190

J

Jack Armstrong, The All-American Boy, 28
 Jacobs, Bob, 128
 Jannarone, Johnny, 61
 Jeffries, John, 165
 Jenna, William W., 20
 Jewett, Richard L., 8, 25
 Johnson, Harold K., 69
 Johnson, James, 165, 180–181, 208
 Johnson, Lyndon, 50–52, 55, 66
 Johnson, Melvin, 71
 Johnson, Wendell, 89
 Johnston, Bennett, 189
 Jones, Bob, 114–115
 Jordan, Bob, 66
 J.W. Morris, Ltd., 205–207

K

Karabatsos, Gus, 84
 Kelley, John, 37
 Kelley, Roy, 39
 Kelly, James, 95
 Kem, Sam, 72, 128, 160, 185
 Kennedy, John F., 51
 Kennedy, Robert F., 67–68, 70
 Kerr, Robert, Jr., 69, 112
 Kerr, Robert S., 47–50, 53
 Kerr Foundation, 68
 Kewitt, Peter, 89
 Khalid, King, 173–174
 King, Geraldine. *See* Morris, Geraldine King
 King, Martin Luther, 70
 King Khalid Military City, 173, 175–176
 Kingman Building, 99, 127
 Knapp, James, 33–35, 37
 Knight, Dana, 57
 Koch, Dwayne, 210
 Koisch, Frank, 34, 100, 119, 178, 193
 Korean War and the 1st Cavalry Division, 40–46
 Kroesen, Fritz, 119, 130

L

Lake Eufala, 57
 Lamers, Ethel, 70
 Lamp, Russ, 124, 128
 Lampert, James, 61
 Lance, Bert, 133, 145

Landing ships, tanks, 14
 Lansing, Olga, 153
 Lawhun, Gene, 96, 152
 Legislative Liaison, Office of the Secretary of the Army, 65–70
 LeMay, Curtis, 15
 Leonard, Ray, 160, 206, 208
 LeTellier, Carroll, 72–73, 114–116, 119, 122, 178, 201
 Lewis, Ben, 164, 180–182
 Liddy, John, 46
 Lincoln, George, 92
 Lindsay, John, 68
 Lines of communication program, 71–72, 75–77
 Li Rei, 166–167, 170
 Little, Lee, 92
 Little River system, 54
 Littleton, Colorado, 103–104
 Lock and Dam 26, 101–102, 118–119, 148–149, 161, 189
 LOC program, 71–72, 75–77
 Lord, Gary, 115–116
 Losche, Robert, 189
 Loschialpo, Ralph, 128
 LSTs. *See* Landing ships, tanks
 Ludwig, Dan, 150

M

MacArthur, Douglas, 15, 126
 MacArthur, Mrs., 144
 MacArthur Castles, 125, 144, 199
 MacDill Air Field, Florida, 11, 13–14
 Management award, 55
 Management course, University of Pittsburgh, 62–65
 Marco Island development plan, 117–118
 Markel, Joe, 144
 Marriage, 18
 Marsh, Jack, 115
 Marshall, Robert C., 72, 128, 134
 Mashour, Mashour Ahmed, 102–103, 174
 Master's degree, 18–21
 Mathe, Robert E., 8, 44, 46, 143
 Maynard, Charlie, 52
 McBride, Don, 48–50, 52, 68, 111–112
 McClellan, John, 49, 68
 McClellan-Kerr navigation project, 50
 McConnell, Richard E., 34, 201
 McElhenny, John, 92
 McGee, Frank, 105, 160
 McGiffert, Mr., 69, 179
 McGinnis, Charles I., 127, 136, 141, 152, 187, 201, 207

McGrath, David J., 216
McGuinness, William V., Jr., 15
McIntyre, Jim, 137–138, 145, 200
McIntyre, Ken, 99, 108
McMurren, Bill, 176
McNabb, Joe, 180
McNeely, Fred, 116, 180, 183
“M-Day,” 42–43
Media image of the Corps of Engineers, 158–161
Mediterranean Division, 178
Meyer, E.C., 150, 155, 181
Middle East Division, 172
Military programs
 Goose Bay, Labrador, 33–37
 hospital construction, 184
 Israeli airfield project, 174–175, 178–183
 Missouri River District, 85, 88
 MX program, 183
 Russia, 103–104, 166
 Saudi Arabia program, 153, 171–178
 support to Army and Air Force, 154–155
 Vietnam, 71–72, 75–77
Military Programs Directorate, 122, 140, 142–143
Miller, Jim, 42, 44
Mills, Wilbur, 50
Milner, Walker, 15
Mine detection, 185
Mississippi River flood, 107
Missouri River Division, 21, 79–91
Mobilization support, 154–155
Moellering, John, 41
Mondale, Walter, 135, 166
Monroney, Mike, 48
Moody, Lester, 31
Morelli, Don, 130
Morris, Geraldine King, 15, 17–21, 23–25, 28, 30, 33, 35, 46–47, 49, 59–60, 63, 69–70, 73, 80–81, 90, 92, 127, 131, 143–144, 174, 200, 204, 206, 211, 213, 220
Morris, John, 24, 27, 34, 46, 55, 59–60, 62–63, 70, 80, 90, 125–126, 143, 220
Morris, Susan, 18, 23–24, 34, 46, 56, 59–60, 62–63, 70, 80, 125, 127, 220
Morrison Knudsen, 175–176
Mount Saint Helens, 164
Mount Santa Rosa, 16
Mouton, Locklin L., 50, 96, 99, 159–160
Moynihan, Daniel Patrick, 191
MRD. *See* Missouri River Division
M-16 rifle problem, 66
Murden, Bill, 102, 166, 169, 189, 195
Murdock, Ken, 96
Murnau, Germany, 23–27
Muskie bill, 96

MX program, 183

N

National Academy of Engineering, 194, 208, 212–215
National Environmental Policy Act, 80–82, 87, 89, 96, 98–101, 108, 110–111, 113–114, 118, 122, 186
National Guard Headquarters, Saudi Arabia, 172–174
National Waterway Foundation, 212
Natural disasters, 164
Navigation projects, 102–106
NEPA. *See* National Environmental Policy Act
Newcomb, Clyde, 36
New Melones Dam project, 180, 192
New York Times, 159
Nichols, Mrs., 115–116
Nixon, Richard, 83, 87, 103, 105, 153, 166
Noah, Max, 182
Noble, Charles “Chuck,” 101, 107
Nonstructural water resource solutions, 103–104
North American Air Defense Command, 81, 85
North Atlantic Division, 33, 180
North Field, Guam, 14, 16
North Platte, Nebraska, 22
Nuclear weapons course, 32

O

OCE. *See* Office of the Chief of Engineers
O’Donald, Ed, 75
Office of Emergency Preparedness, 93–94
Office of Management and Budget, 100, 108, 112, 137, 144–146, 200
Office of the Chief of Engineers, 33, 37–40, 46–49, 56, 59–60, 74, 91–92, 94, 97, 100, 120, 123, 127, 138–140, 146–147, 151, 180, 190, 195, 204
Ohio River, 101
O&M. *See* Operations and maintenance program
OMB. *See* Office of Management and Budget
Oolagah Dam, 59
“Operation Last Chance,” 76
“Operation Snowbound,” 21–23
Operations and maintenance program, 101, 108–109, 123
Optima project, 57
Orrell, George, 164, 195–196
O’Shei, Don, 181

P

Pacific Air Command, 15
Page, Bob, 109, 146–147, 162
Pak-Ai Orphanage, 44
Panama Canal, 177
Panjiakou Power Station, 168

Panmunjom, Korea, 45
 Pappen, Warren, 160
 Parfitt, Hal, 75, 177
 Parker, David S., 15, 44, 71, 73–75, 195
 Parse, Mel, 49
 Partek, 206
 Patton, George, Jr., 119
 Pavement Consultancy Service, 205–206
 PCS. *See* Pavement Consultancy Service
 Pearl Harbor, 6
 Peel, Wesley, 201
 Pendergast, Pat, 82–83, 89–90
 Penney, Howard, 47–48, 63, 65–70
 Pensacola project, 54
 Pentomic division organization, 44–45
 Perini, 180–181
 Permanent International Association of Navigation
 Congresses, 102–104, 157, 208, 210, 214
 Personnel management, 38–40, 45
 Peterson, Pete, 15
 Peterson, Roger, 128, 193
 Philippines and the Pacific Air Command, 15
 Phillips, James, 8, 10–11
 PIANC. *See* Permanent International Association of
 Navigation Congresses
 Pick, Lewis A., 21, 28, 79, 82, 124, 190
 Pierson, Helen, 82
 Pine Creek Dam, 54
 Pine Tree Network, 37
 Planning Research Corporation, 163, 207
 Ploger, Robert R., 38–39, 78
 Ponca Tribe (Oklahoma), 57, 125
 Post-retirement career, 204–215
 PRC. *See* Planning Research Corporation
 Prentiss, Lou, 92, 119
 Presidential dedications, standing operating
 procedures for, 52
 Princess Anne, Maryland, 3
 Privatization initiative, 109–110
 Pro bono work, 213
 Procurement officers, 58–59
 Promotions
 brigadier general, 68
 colonel, 44–46
 history, x
 lieutenant colonel, 29–30
 lieutenant general, 125
 major, 24
 major general, 90
 Public Affairs Office, 160
 Public hearings, 54–55
 Public relations, 56, 158–161
 Pulaski Building, 107, 142

Q

Quinn, Jack, 128

R

Randolph, Jennings, 203
 Rathburn, Vincent, 102
 Raymond, Danny, 85, 114, 122
Reader's Digest, 159
 Real estate issues, 54, 59
 Real property management program, 139, 154
 Rebh, George, 72, 89, 128
 Recreation projects, 88
 Red River project, 53–54
 Regimental Tactical Officer, U.S. Military
 Academy, 61–62
 Reisler, Irv, 95
 Reissner, Mark, 211
 Renshaw, Clarence, 33
 Reorganization of Combat Infantry Division, 41
 Repairs and utilities program, 15
 Reserve Officer Training Corps, 20
 Resor, Stanley, 66–67, 73
 Resources Management Office, 128–130
 Retirement
 ceremony, 199–200
 post-retirement career, 204–215
 Rhea, Frank "Snuffy," 33
 Rhodes, John Jacob, 192
 Richard B. Russell Dam, 31
 Rivers, Mendel, 66–67, 156
 Riyadh, Saudi Arabia, 116, 172, 176–177
 Robertson, George, 176
 ROCID Division, 41
 Rock Island Arsenal, 85
 Rocky Mountain Arsenal, 81
 Rogers, Bernard W., 8–9, 12, 30, 62, 88, 129–130,
 148, 150–151, 155, 177, 185
 Rollins, Andrew, 78, 106
 Roos, William, 14, 20
 Roosevelt, Franklin, 3, 83
 Roper, William, 78
 ROTC unit, 20
 Royal Dutch Shell, 205
 Royal Volker Stevin, 204–205
 Ruckelshaus, William, 87, 98
 Russell, Richard, 28, 31
 Russia and construction projects, 103–104, 153,
 166

S

Safer, Morley, 160
 Saint John, Adrian, II, 218
 Saint Patrick's Cathedral, New York, 67–68

Salt study (Arkansas River), 53–57
SAME. *See* Society of American Military Engineers
Sam Whan, 158, 175
Santecrose, Command Sergeant Major, 72
Sari, Helen, 213
Saudi Arabia program, 116, 153, 155, 158, 171–178
Savannah, Georgia, 27–31
Sawyer, K.T., 19, 38, 57
Schlesinger, Dr. James, 141
Schroeder, Daniel R., 198
Schubert, Frank N., 178
Scott, Richard, 61–62
Scottsdale, Arizona, 192
Section 404 program, 98–100, 108, 186
Selman, Mr., 56–57
Seltzer, Manning, 59, 84, 99, 128, 190, 198
Seltzer and Rosen, 208
Senate Armed Services Committee, 67
Sergeant, Howard, 95
Sergeant, Meg, 194
Sergeant Floyd, 106–107
Settle, William, 57
7th Division, 40
Shay, Mrs., 179
Shimen Power Station, 167
Shoemaker, Robert, 130
Shrader, Henry, 73, 78–79
Silver Anvil, 106, 160
Simpson, Alan, 191
60 Minutes, 160
Skidmore, Frank, 20
Smith, Dr. Mark, 209
Smith, Jim, 95
Smith, Tony, 57
Smith, Walter, 92
Society of American Military Engineers, 155, 198, 211
Solomon, Morton, 33–34, 37
SOPs. *See* Standing operating procedures
Southern Hills Country Club, 55
Sprewell's Bluff project, 135
Standing operating procedures for presidential dedications, 52
Steinberg, Bory, 95
Stennis, John, 106, 125, 136, 142, 191
Stewart, Bill, 195
Stillwell, Richard, 71, 77, 208
Strategic Air Command, 14, 81
Strategic Planning Group, 195
Strong, Pat, 28
Suez Canal project, 102–103, 153, 158, 174
Sugar Bowl, 67
Sullivan, Jack, 57
Sultan, Prince, 173

Susquehanna District, 91–94

Svore, Jerry, 87

Swaiko, Alex, 95

T

Taco Dam, 136

Tarbox, Bob, 14, 61, 71

Taylor, Bill, 129

Tener, Bob, 42

Tennessee-Tombigbee project, 102, 122, 133, 138, 159, 161, 189–191

Tennessee Valley Authority, 48, 166

Texas City disaster, 17

3d Engineer Aviation Unit Training Center, 11–13

13th Engineer Battalion, 40

Three Gorges Dam, 166–167, 169–170

Thurman, Max, 61–62

Thurmond, Strom, 28

Timblin, Lloyd, 211

Today Show, 105, 160

Tofani, Joe, 95, 101, 109, 145, 152–153, 161, 189, 206

Tokyo, Japan, 15, 17, 20, 23, 44, 71

Toohey, Mike, 95

Toups, John, 207

Train, Judge Russell, 98

Train, William, 46

Trainor, Charlie, 28

Truman, Harry, 21

Truman Dam, 84

Tucker, Lem, 161

Tulsa Engineer District, Oklahoma, 47–61

U

Uniform Committee, U.S. Military Academy, 63–64

University of Iowa, 17–21

University of Maryland, 170, 205–206, 208–209

University of Pittsburgh, 62, 65

University of Vermont, 209–210, 213–214

Upper Mississippi River Commission, 102

Urban studies program, 86, 193

U.S. Army, Europe, 119

U.S. Army Strategic Air Force, 14

U.S. Committee on Large Dams, 208, 210–211, 214

U.S. Congress, relationship with, 138, 152

U.S. Military Academy, 12, 18, 39, 60–65, 67, 80, 208–209, 215

USAREUR. *See* U.S. Army, Europe

USASTAF. *See* U.S. Army Strategic Air Force

USCOLD. *See* U.S. Committee on Large Dams

V

Valenti, Jack, 51

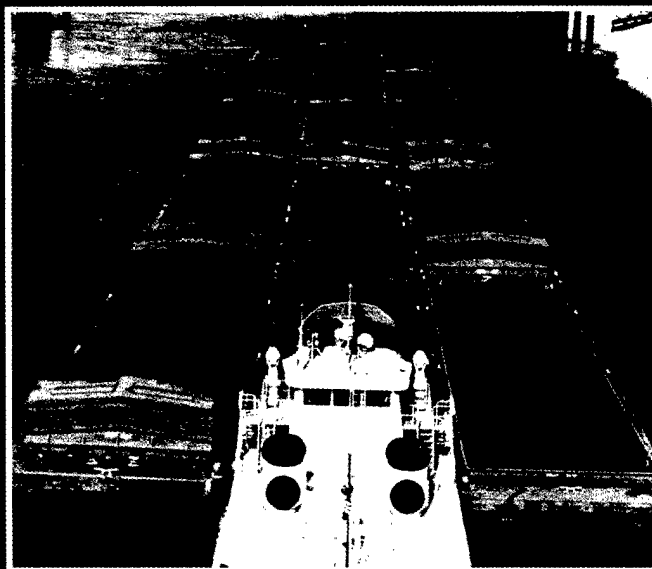
Value engineering, 55, 88

Van Autreve, Leon L., 41, 75
 Vehicles, air-conditioned, 59–60
 Velsmid, Helen, 128, 133
 Verdigris River, 59
 Vessey, John, 97, 130, 199–200
 Veysey, Victor, 97–98, 104, 122, 146
 Vietnamization program, 77
 Vietnam War
 18th Engineer Brigade, 71–79
 helicopter accident, 74, 79
 impact of build-up on West Point cadets, 63
 protest movement, 69–70
 troops build-up, 66
W
 Waggoner, Jack, 72
 Walden, Don, 191
 Walker, George, 85
 Wall, John, 72, 101, 163, 180–182
 War College, 38, 40, 44–46
 Washington, D.C.
 Chief of Engineers, 124–204
 Deputy Chief of Engineers, 114–124
 Director of Civil Works, 91–114
 Legislative Liaison, 65–70
 post-retirement career, 204–215
 Water Resource Development Act, 104
 Water Resources Act of 1986, 146
 Water Resources Congress, 86–87, 101, 206, 208, 212
 Water Science and Technology Board, 208, 212
Water Spectrum, 116, 145
Waterway Productivity, 212
 Waterways Experiment Station, 100, 120, 162–163
 Waterways study, 187–188
 Watson, Jack, 134–135
 Waurika Dam, 49
 Weinert, Don, 40, 122, 155, 195–196
 Weizmann, Ezer, 182
 Wells, Richard, 116, 172

WES. *See* Waterways Experiment Station
 West, John C., 174
 Western Maryland College, 3–5
 Westmoreland, William, 66, 69
 West Point, New York, 3–13, 19–20, 32, 60–65, 67, 70–71, 128, 143, 165, 208–209, 213–214
 West Point Dam dedication, 114–116
 Wetherall, Stewart, 72
 Weyand, Fred, 69, 125, 129
 Wheelock, Gray, 61
 Wherry housing, 31
 Whitehead, Ennis, 15, 20
 Wichita, Kansas, 49
 Wilhoyt, Ellis E., 28–30
 Wilkinson, Bud, 51
 Williams, Arthur E., 72, 140, 214
 Williams, Torrey, 116
 Willis, Homer, 95–96, 102
 Wilmington, North Carolina, 20
 Wilson, “Babe” Francis, 50, 59
 Wilson, Drake, 149
 Wilson, Walter K. “Weary,” 28, 47, 50, 55, 197
 Witczak, Dr. Matthew, 205–206
 World War II, 6, 10, 13
 Worthington, Fayette L., 15
 Wray, Bill, 139–140, 143, 177, 180, 183
 WRC. *See* Water Resources Congress
 Wright, Jim, 50
 Wujiangdu Power Station, 167
Y
 Yangtze River, 167, 169–170
 Yerks, Bob, 62
 Young, Crawford “Jug,” 23
 Young, Mason, 36
 Youth Improvement Program, 66
Z
 Zais, Mel, 71, 77

Appendix A
“Our Troubled Waterways”
Water Spectrum
Winter 1974–75

OUR TROUBLED WATERWAYS



by Maj. Gen. J. W. Morris

The requirement to dredge our navigable waterways to insure proper channel depths for shipping, and the resultant need to dispose of the dredged materials, has become a problem of great national significance. Unless we can find ways to continue the maintenance of our waterways in the face of environmental, legal and technical constraints, a situation may be precipitated which could adversely affect the entire economy.

For the past 30 years, domestic waterborne commerce, including inland barge and Great Lakes traffic, has moved almost 16 percent of the Nation's ton-miles of intercity cargo.

This inland waterway barge traffic has increased over the past 2 decades at a compound rate of slightly over 5 percent per year.

The amount of tonnage that can be moved in a single tow has increased from 5,000 to 50,000 tons per tow during that period. It is predicted that traffic on various segments of the waterways will increase from 4 to 6 times in the next 50 years. Total waterway commerce presently totals 1.7 billion tons per year—over 350 billion ton-miles—or about 7 tons per capita. This cargo is carried at an average cost of 3 mills per ton-mile.

While the freight traffic of grain, ores, chemicals and construction materials continues to increase, it is the energy-producing commodities, predominantly petroleum and coal, that comprise slightly over 50 percent of the domestic waterborne freight. As the cost of energy materials increases, it becomes more important to move them as economically as possible for the ultimate benefit of the American consumer. As the prime mover of energy supplies, water carriers are also the least consumptive—using less than 500 British Thermal Units of energy per ton-mile.

About 1/3 of total waterway commerce is with foreign countries. Raw materials and manufactured products which move through our waterway system to the export market contribute significantly to our national economic health by bulwarking our balance of payment deficit and helping to keep the dollar strong in foreign markets.

While a national view of waterway economic statistics may demonstrate magnitude, a narrower focus can be more meaningful when applied to a localized situation. At New Orleans, for example, the economic impact of the port to the local area and to the State is tremendous. The chain of economic events that starts when cargo lands at that port finally results in the employment of 37,000 people, \$7 million in city taxes, \$19 million in State taxes, \$256 million in port-related income, and a total economic impact on Louisiana of \$1.8 billion a year.

Expansion of port, harbor and associated facilities goes hand-in-hand with continued economic and population growth. In the 27-year period ending with 1972, individual ports in the U.S., Puerto Rico and Canada invested almost \$4 billion in marine terminal facilities. The projected rate of annual investment for these purposes during the 1973-77 time frame is \$341 million. Development of service facilities for off-shore oil terminals may add another \$500 million to this investment.

Thus, the viability of our economy is clearly dependent upon our ability to keep the channels of our waterways, ports, and harbors open to navigation. However, our harbors and channels are subject to shoaling and loss of depth from natural deposits of material. In order to maintain navigation we either have to limit vessel draft or remove the material blocking the channels by dredging.

This national decision involves the Corps for the following reason. Since 1824, the Corps has had a congressionally mandated mission to plan, construct, operate and maintain our waterways. During this time, the country has developed 25,000 miles of navigable channels, 107 commercial ports and harbors and 400 small boat harbors. Fifteen thousand miles of these channels are 9 feet or more in depth and, except for the upper Mississippi and Missouri Rivers and the St. Lawrence Seaway, all of the waterways are open to year-round navigation.

In order to maintain this year-round capability, periodic dredging of all channels is required. This, by itself, is a straightforward task, varied only by the methodology involved, and for 150 years dredging has been a daily activity attracting little or no attention from the public or other water resource agencies. All of a sudden, however, dredging became a dirty word and the Corps was placed in the position of being able to take the material from the bottom of our waterway channels—but without any place to put it.

When constraints are placed on the methods of disposal of the dredged material, a classic dilemma is born. Dredging is essential or shipping stops. If there is no place to put the transient real estate blocking the channel—we cannot dredge. We found the sharp horns of this dilemma gouging us more deeply each day.

So the stage was set for the entrance of the first constraint—the environment! Previously, there has been very little understanding of the national dredging program on the part of either the general public or other water resource agencies. Nor has there been any attempt on the part of the Corps to explain what essentially was a routine operation. Consequently, when the environmental alarm bells rang and “pollution” became a household word, it was understandable that concern would be evidenced when there was talk of wetlands being destroyed by dredged material placement, back channels being blocked to the detriment of fish and wildlife, and deep water areas used for placement of dredged material named “ocean wastelands.”

To overcome this communications gap and to develop better public understanding of the problem, it is essential to discuss openly and fully the pros and cons of the dredged material placement program, the constraints under which the Corps operates, and what is being done to rectify the situation.

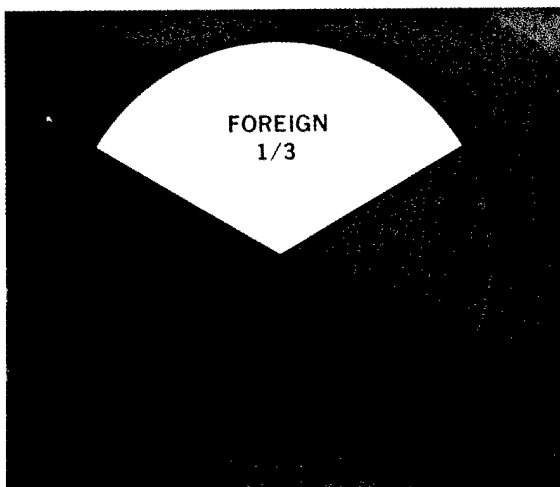
There are only 4 general types of areas that may be used for placement of the material removed from the channels. These are off-channel, ocean or other open water areas, diked areas, or areas upland from the dredging site. Each has both advantages and disadvantages.

Off-channel discharge, common to our inland waterways, is highly cost effective. This consists merely of a dredge pumping the material from the bottom of the channel and redepositing it in the water far enough away from the pickup point to prevent the material from slipping back into the channel. This method has some positive benefits, in that it can extend wetland areas, create artificial islands and



Over half the domestic freight movements, such as this coal laden tow, carry energy related commodities.

About 1/3 of our waterway commerce originates or terminates in foreign countries.



develop attractive recreational areas. On the negative side, this method of disposal causes a short-term increase in water turbidity at the discharge point for a short period, temporarily disrupts the local biotic community, and tends to cause shoaling which can interfere with lateral drainage and natural flows. In regard to the affected biotic communities, we are aware that changes do take place, but the state-of-the-art does not yet permit us to evaluate these changes quantitatively with any degree of accuracy.

This inland disposal problem is in sharp focus in the upper Mississippi River, where off-channel disposal is used extensively. The Corps has maintained navigability of this area since 1922 by congressional direction.

Maintenance dredging in the channel, along with natural accretions, has created a series of small islands which act to reduce the water surface, to narrow existing wetlands and, in some cases, to cause shoaling. This has caused back channel drainage problems. As a result, our disposal techniques have come under sharp criticism from environmental interests in the adjacent States, where court injunctions have prohibited all but emergency dredging.

Ocean and other forms of open-water disposal have always appeared environmentally acceptable and this method has been used for many years. It avoids disruption of all the natural values in the coastal zone, including estuaries and wetlands. Further, the disruptive influence it has in the discharge area is so small in comparison to the vast and dynamic influence of the surrounding waters that the net effect should be minimal. On the other hand, some marine scientists contend that the long-term cumulative effects of ocean water disposal could have serious adverse conse-

Heavy silting following flooding of the lower Mississippi effectively reduced foreign trade at the port of New Orleans by an estimated half billion dollars during the spring of 1974.



quences. Again, we simply do not know enough about the effects of open-water disposal to determine the degree of risk involved.

One approach to this problem is to dispose of the dredged material in very deep water at great distances from the shore. However, the cost of long-haul disposal increases drastically with distance. The Corps has been faced with this alternative in San Francisco Bay where constraints against traditional open-water disposal have seriously affected maintenance efforts.

This happened when other Federal agencies and the State of California adopted suggested Environmental Protection Agency (EPA) guidelines for pollution. The guidelines for heavy metals, for example, provide that dredged material containing levels in excess of those recommended should not be placed in open water. However, the natural state of certain spots in San Francisco Bay already exceeds EPA guidelines for several heavy metal pollutants. Consequently, if we pick up bottom material from these spots, we cannot put it back in the bay.

The alternative is to take this small percentage of material that exceeds EPA guidelines out to sea for disposal. However, this increases unit dredge costs and the time required for normal maintenance dredging.

Reduced dredging in some vital channels could pose a national security problem as well. Without normal channel depths, that part of the Pacific Fleet home-ported in the bay area would have to be diverted to other refitting and resupply berthing areas along the West Coast.

Diked disposal offers major advantages absent in either off-channel or open-water methods. This method can be used to supply land fills for industrial or recreational development. Additionally, by carefully controlling the elevation profile, diked disposal areas can be used as wetlands. One limiting factor is environmental, since diked disposal areas generally lie along a shoreline or are superimposed on natural wetlands and, consequently, are usually controversial. Furthermore, the cost is high. For instance, our diked disposal program in the Great Lakes will cost an estimated \$240 million over the next 10 years. Yet this same amount of money would pay for 25 years of open-water disposal in the Great Lakes.

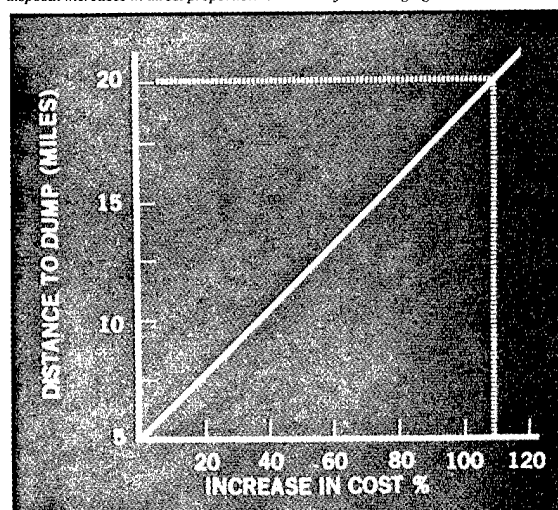
A typical problem with diked disposal can be illustrated by the Cleveland Harbor project. Dredging on the Cuyahoga River outlet is backlogged because the initial diked areas have become filled in the Cleveland area. New diked areas have not yet been completed. The delays are caused by various factors, including environmental objections to the newly selected sites. Only the currently high waters within the Great Lakes, which have increased draft depths, are preventing an immediate problem of serious magnitude.

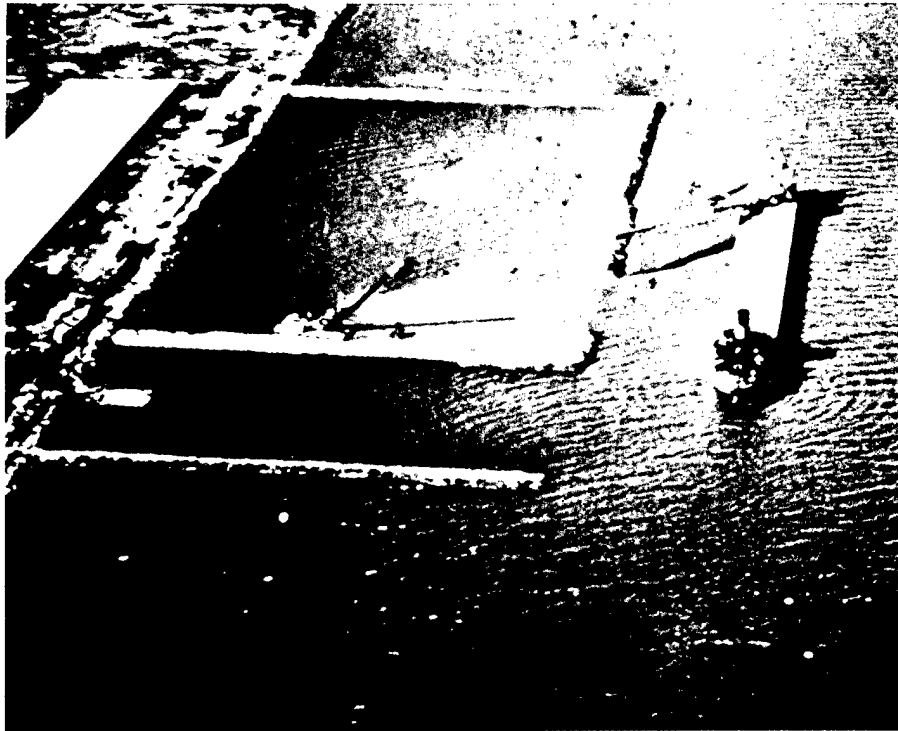
Upland disposal, the fourth method of disposal, is often suggested as an alternative by those who find the other 3 objectionable. Unfortunately, this method also has its disadvantages because it requires that considerable real estate be taken out of the useful land inventory for a period of time. For example, a small effort such as the river channel at West Haven, Conn., involves only 81,000 cubic yards of dredged material, but it requires over 20 surface acres for placement. In high density population areas, even a parcel that small is difficult to find within economic reach of the dredges and at a reasonable price.

This method also causes some change in land configuration, some disruption of the predisposal biotic community, and almost always some opposition from landowners, communities, developers, conservationists and a host of others who disagree with the site selected for one reason or another.



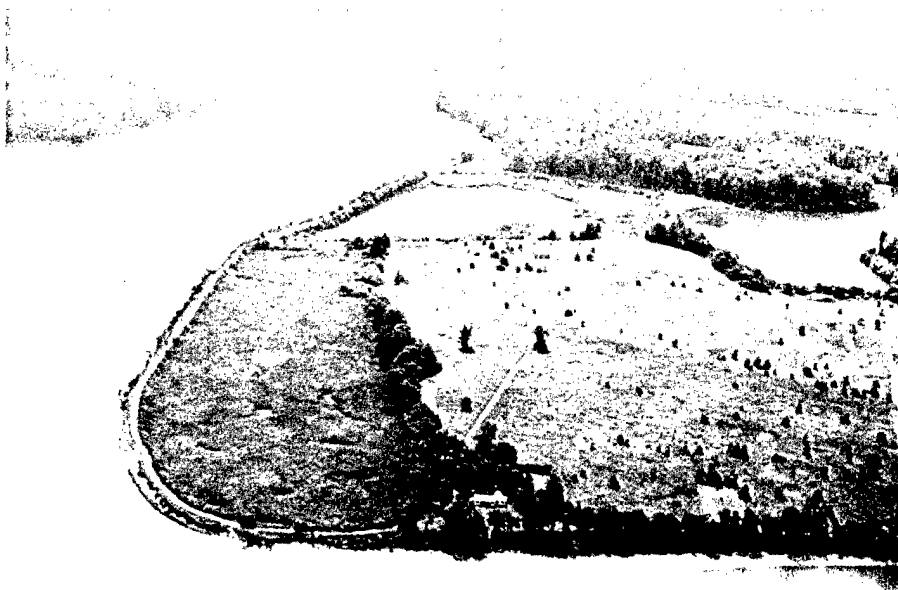
Hopper dredges can dump into open ocean water, but cost of long-haul disposal increases in direct proportion to distance from dredging site.





Diked disposal can supply land fills for new development but often conflicts with existing land uses.

Dredged material placement often enhances an area so much that further use brings environmental protests. The fishing hole at Cabin Johns creek on the C&D Canal is an example.



Occasionally the Corps does such a good job of material placement that disposal sites are preempted. At Cabin Johns Creek, on the Chesapeake and Delaware Canal, we used up approximately 1/3 of our disposal capacity at that uncontested placement site back in 1969. When we returned this year to reuse the site, we found that the pond created in the upper basin had become a popular fishing place, was abundant with wildlife and enjoyed by many recreational visitors. So that site is now a valuable *natural* resource, environmentally unacceptable to use for further disposal placement.

In the legislative arena there have been several major laws enacted that impact on our maintenance effort, beginning with the Fish and Wildlife Coordination Act of 1958. Only 3 of the laws enacted since then, however, primarily affect dredging. These are the National Environmental Policy Act (NEPA) of 1969, Section 404 of the Federal Water Pollution Control Act Amendments of 1972, and Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972. The latter section is referred to separately as the Ocean Dumping Act.

Under NEPA, an Environmental Impact Statement (EIS) is required whenever a major Federal action significantly affects the quality of the human environment. On the date of NEPA's enactment the Corps had over 1,200 navigation maintenance projects, many of great scope and environmental complexity, and we had to consider initiating impact statements on them all. The administrative burden alone was rather staggering.

During the period the Corps was getting underway with NEPA, Congress passed the Federal Water Pollution Control Act Amendments and the Ocean Dumping Act. While both acts designate the Corps as the permit issuing agency responsible for authorizing dredged material discharges, they also give EPA substantial review responsibility and the ultimate decision making power in a contested action.

The key factor in each act is the requirement to provide notice and opportunity for public hearings. While this requirement has existed for construction projects for many years, this is the first time it has been applicable to maintenance work. Although primarily oriented toward permit authorization for dredge disposal by commercial entities, these provisions apply equally to Corps operations. While the Corps does not issue permits to itself, it does apply to itself (by regulation) the same criteria and procedures that are applied to other permit applicants. Of course, Corps actions are also subject to EPA review and potential denial of selected sites.

While the administrative requirements are being met with relative ease, the remaining problems involve 2 principal matters: first, the overwhelming number of impact statements that have had to be prepared; second, it now requires greater effort and time to provide impact statements sufficiently technical and legal to satisfy private organizations and other Federal agencies.

Not being able to prepare these impact statements on short notice, we established a priority for ongoing projects. Even though NEPA did not require an EIS on projects under construction prior to NEPA, the Corps made a conscious decision to include these in the belief that some change might be needed in a given project which would be beneficial to the environment.

To date, over 1,600 environmental statements have been prepared. We now have impact statements prepared and filed on all new construction work. On certain dredging projects in operation before NEPA, some of which have been underway for a century, we still have a substantial backlog. There are environmental assessments available, but no statement or

negative determination has as yet been filed with the Council on Environmental Quality.

Under the previously mentioned public notice provision, those in opposition to a project not covered either by an EIS or negative determination have a basis for legal action. In emergency situations, however, waterway navigation and dredging activities to sustain it must continue—meaning some dredging projects may have to go ahead immediately without either type of statement. Potentially controversial projects, however, have been identified and expedient EIS action is being taken to preclude work stoppage by legal injunction.

Another congressional directive engendered a constraint of an entirely different nature, which also had an impact on the dredging program. Two years ago, the House and Senate Appropriations Committees directed the Corps to undertake a study and make recommendations back to them on the proportionate number of dredging vessels required in both the Federal and private sectors. During the conduct of this study, a moratorium was placed on any additions, modifications or replacements to the Corps-owned dredge fleet.

This moratorium came at a time when decisions were needed to update a dredge fleet that had been in operation an average of 30 years and was getting continuously more expensive to operate and maintain without extensive modifications or replacement. Private contractor-owned dredge equipment was in much the same condition. In view of the moratorium placed on the Federal sector, private contractors were unwilling to make large capital investments until Congress reached some decisions.

While the Federal and private sector dredge-plant equipment has been capable of handling normal maintenance requirements, despite age and condition, emergency situations have played havoc with that capability.

Last spring, for example, because of flooding, high waters and extremely heavy silting in the Mississippi River, the entrance channel to the Port of New Orleans was reduced in depth from 40 to 34 feet. This required ships to sail in and out with less than a full load, holding some \$500 million in imports and exports out of the world commerce market. To meet this crisis, the Corps had to shift both federally-owned and contractor plant equipment within the Gulf coast area and from the entire East Coast just to dredge the New Orleans channel back to normal project depth. As a result of this emergency requirement, a dredging backlog was created in other ports and harbors.

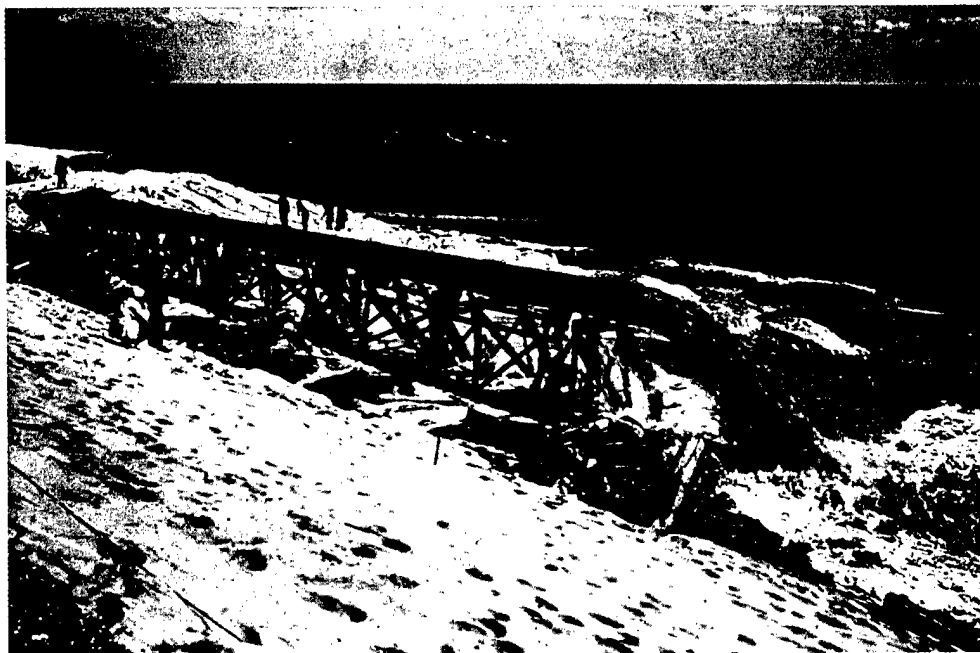
In addition to the inefficiencies of aging plant, and the higher costs of labor and materials, there are increased costs associated with more expensive disposal methods—such as long-haul ocean disposal—in trying to use equipment which is not well adapted to those methods.

Dredging costs, like the costs of all goods and services, are steadily increasing. In 1967, the cost was less than 30 cents a cubic yard for the removal and disposal of dredged material. By 1976, at the projected rate of increase indicated by all economic factors, this cost will rise to almost 60 cents a cubic yard.

At our peak in maintenance dredging we removed and disposed of 300 million cubic yards of dredged material. Compressed into one-yard cubes covering a mile square area, this amount would grow skyward at the rate of one football field length each year. Spread out, it would give Delaware a new surface, a yard deep, every 20 years.

While our ability has been declining since that peak period, the requirements have continued steadily upward and at this point-in-time we should be at the 400 million

Beneficial uses of dredged material can include recreation areas, nourishment of beaches, creation of wildlife habitats and new islands with multipurpose potential.





WATER SPECTRUM

cubic yards a year stage for both maintenance and new construction dredging. With the current constraints our FY 1976 capability projection is just slightly above 200 million cubic yards annually.

Had each issue—*dredged material and its placement—EIS requirements—the dredge plant moratorium*—arisen separately in time, each one could have been handled individually without a major impact on our waterways. Unfortunately, they surfaced almost simultaneously and, consequently, have seriously affected the Corps' ability to maintain navigation. While the solutions have been slow in coming, the Corps is making progress.

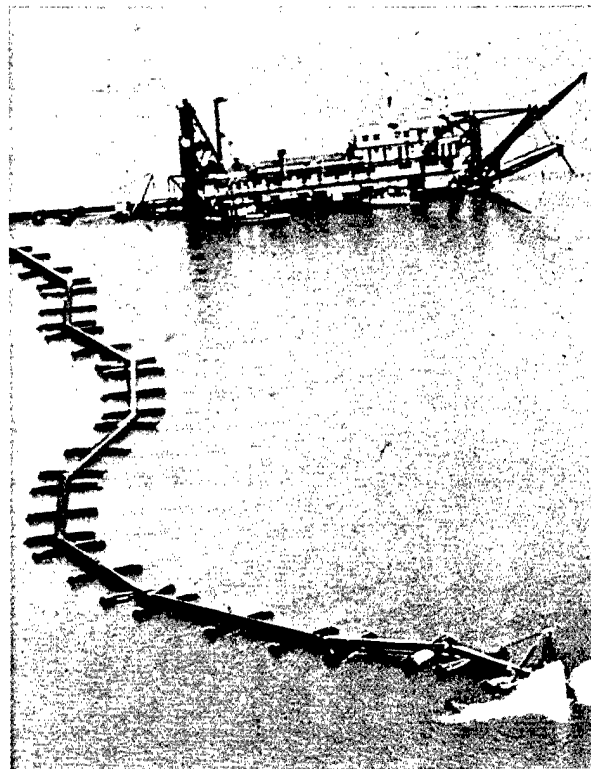
On the first issue, the Corps initiated a two-pronged attack several years ago. First, we started looking for new disposal concepts and techniques which would convert dredged material from a vexing problem into a valuable resource. Our environmental and recreational staffs have been working with our engineers to develop beneficial ways to use dredged material. In some areas we have created new wetlands, created water-based recreational areas, nourished beaches, created wildlife habitat, and created or extended highly attractive islands. (As the public and other agencies become convinced that dredged material can serve useful, beneficial purposes, the task will become easier.)

Second, we embarked last year on a 5-year, \$30 million research program being managed at the Waterways Experiment Station located in Vicksburg, Miss., by a staff of experts selected from the governmental, scientific, industrial and academic communities. The object of this research is to consider dredged material as a renewable, recyclable resource and find ways to use it beneficially—develop methods of on-site testing of dredged material to determine quickly its degree of pollution, if any, and the origin of any contaminants—determine the environmental impacts of both water and land disposal—explore new disposal concepts—and to make use of improved dredging and disposal equipment and techniques.

Out of all this we should learn where dredged material is harmful and where it is not. We should learn what additional costs are justified in the interests of environmental protection. And, equally as important, we must learn enough to answer the kinds of questions that will make impact statements not only technically viable, but sufficiently authoritative to satisfy the public; a public that wants the assurance that not only will there be an absolute minimum of environmental impact, but that any change required to maintain navigation will also be mitigated as much as possible.

As to the second issue—the legal requirements—we have taken the position that with the passage of NEPA, Congress did not intend to halt all ongoing major Federal actions which might significantly affect the quality of the human environment. Had this been the case, our entire transportation network, from a maintenance viewpoint, would have become a nightmare of economic chaos. Rather, the intent was to comply as quickly as humanly possible while making the necessary adjustments to maintain navigability of our waterways in the interim. This is what the Corps is doing. We have an intensive effort underway to insure full compliance by no later than January 1976.

Our third issue—the status of the aging dredge fleet—has now passed the study stage and the final report has been forwarded to the Secretary of the Army for subsequent transmittal to the Congress. This study and our recommendations should greatly assist Congress in determining the total plant required in both the Federal and private sectors and in deciding under what conditions to lift the moratorium on Federal plant improvement. Both the Federal Govern-



The average age of the Federal dredge fleet is over 30 years. Congress will soon be studying Corps recommendations on this problem.

ment and private industry should then be able to move forward in confidence with a modernization of the national dredge fleet and with improvements in the operating characteristics of dredging, which are just as badly needed.

The Corps' experience and organization make it well suited to continue its job of maintaining the country's navigable waterways. During this period of constraints on dredging, however, the adjustments being made will depend upon the good will of the public and the cooperation of other agencies.

The Nation needs our waterways; they are more vital to our economic well-being now than perhaps ever before. The Corps is convinced, however, that the challenge presented by dredging constraints can be successfully resolved without sacrificing environmental quality of life, in compliance with public laws, and in a technological manner superior to methods and equipment used in the past. The Corps is dedicated to pursuit of that challenge. ■

Appendix B
“A Time for Reflection”
Water Spectrum
Fall 1975

Reprint of an interview with
Maj. Gen. J. W. Morris by the editor of
WATER SPECTRUM, published
quarterly by the
U.S. Army Corps of Engineers.



A TIME FOR REFLECTION

Maj. Gen. J. W. Morris

In mid-September 1975 Major General J. W. Morris relinquished his post as Director of Civil Works to become Deputy Chief of Engineers. In doing so, he left behind a job and a challenge he had enjoyed more than any other he had ever held. Since the spring of 1972 General Morris had been in a position that required him to lead the Corps of Engineers in coming to terms with the challenging provisions of the National Environmental Protection Act

(NEPA) of 1969. His tour of duty encompassed that period when the Corps was hardest put to implement through action what NEPA requested in mere words. A task easier talked about than done. *Water Spectrum*, therefore, asked the out-going director to discuss the accomplishments of the U.S. Army Corps of Engineers in overcoming some of the major environmental problems faced during his 3-year tour.

General Morris, what exactly has the Corps done under your direction regarding national issues of environmental concern?

If I were to rank our efforts in accordance with their relative importance to the environment, I would say the policy organizational changes which have been made from top to bottom are fundamental to all the rest. These changes were made so that the U.S. Army Corps of Engineers, in accomplishing its mission, could give proper and full consideration to the environmental effects of proposed solutions to the Nation's water problems. Few people realize that we have now augmented our internal staffing so that decision makers at all levels have full environmental advice available which can be input into the decision making process.

Among our external activities, I would have to put the regulatory, or permit, program high on the list of things the Corps has done in recent years, particularly where the program controls abuses to the Nation's environmental assets.

We can put nonstructural approaches to solving flood problems near the top of the list, too, since it was Corps

initiative that unleashed the great potential that exists here in dealing with flood control. Among other areas in which we have made significant progress, I feel that the Corps studies and the adjustments we are making in our maintenance program, particularly the dredging portion, are important.

Which specific areas of environmental concern would you say deserve the most attention at this particular time?

I think our efforts to protect the wetlands must continue to get highest priority. We can approach this problem from two directions: not only to *protect* the wetlands we have, but also—which I think is completely reasonable to anticipate—being able to *produce* wetlands.

Our flood control problems also require a new look. While I think there are probably going to be continuing needs for structures to store excess waters, I would like to see much more attention given to the nonstructural solutions as the first option. We are moving that way rapidly. A related area that needs a lot of attention, and provides great opportunities for the future, is a full analysis of flood plains throughout the country. We need

complete identification of what is there now, an inventory of the environmental assets and development of sufficient hydrologic data to identify the areas susceptible to flood damages. This information can then be turned over to the local governments to keep our flood plains from being unwisely developed and thereby minimize future problems.

A third area that still deserves a lot of attention is water pollution. This is basically EPA's (Environmental Protection Agency) and not the Corps' primary responsibility, but we certainly can help. The last, but not necessarily the least important, problem requiring priority attention is our urban areas. We've allowed water resources problems to develop where our people are concentrated. We need to do a lot more work to be sure we're not encouraging unnecessary flood damages, to provide energy where it's needed, to keep water supply available for our people, and to avoid building problems for the long term.

Continuing in the environmental vein, the Corps also is responsible for maintaining domestic waterways. What happens when the Corps is instructed to stop dredging at a particular location?

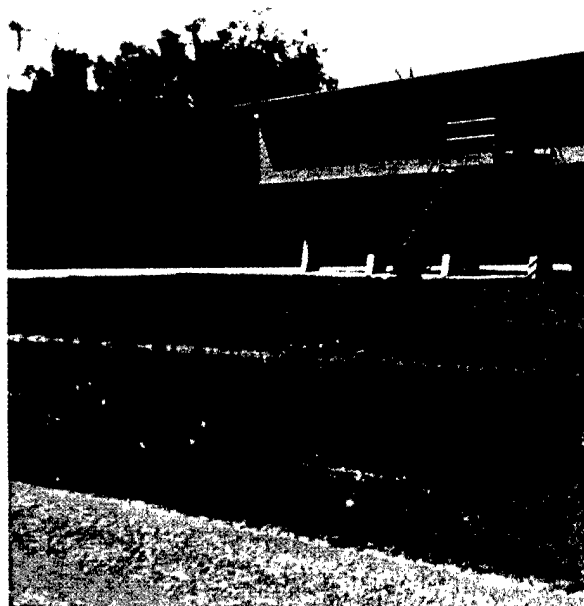
When the courts tell us to stop dredging we do as the courts direct. Of course we are usually given such instruction on an injunctive or temporary basis either because, in the courts' opinion, we've not fully complied with or not satisfied some requirements of the law. Therefore, the stoppage usually is dependent upon or limited by certain actions which we are expected to take. We then make adjustments and, hopefully, are able to resolve the legal cause of the stoppage. The instructions to stop dredging have been relatively few and, almost always, we've been able to resolve the issues.

Suppose the Corps cannot resolve the issues and is told to stop dredging. What alternatives are there?

There really aren't too many alternatives since natural processes tend to make the rivers shallower. The only alternatives then would be less utilization of that waterway or port, or changes in the configuration of the shipping fleet that uses it. I really don't feel the alternatives need be that severe; I think the problem is finding alternative methods of dredging so that we can continue to operate the waterways.

Besides dredging, are there other problems that affect navigation?

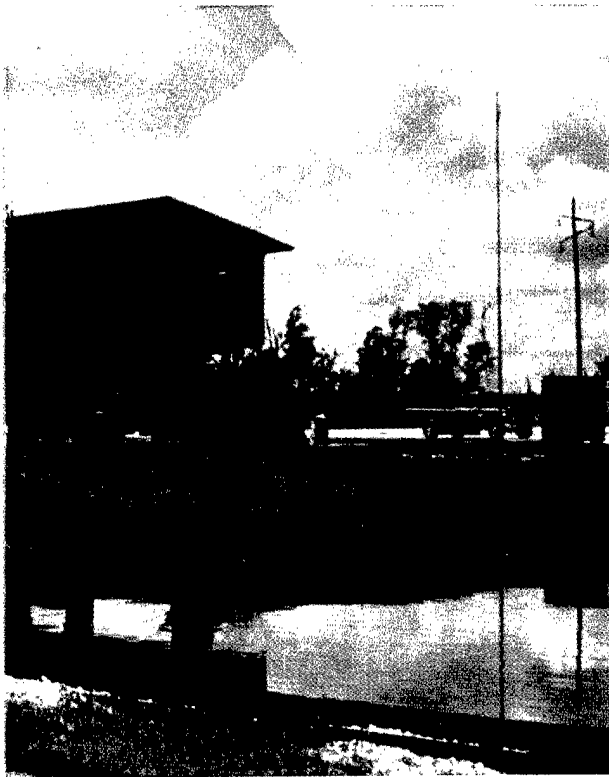
Yes. We have a continuing problem concerning the efficiency of the existing structures, or locks. Many of our locks are old and not as efficient as we would like to see them. Some are inadequate for the volume of today's traffic, others are reaching the point in age where they



served their usefulness and need to be replaced for safety reasons. So we have a continuing problem on our waterways: not only in keeping channels at authorized depths, but also in modernizing and replacing our locks and, in some cases, maintaining channel alignment through bank stabilization and control structures.

Such an extensive maintenance program implies outlay of a large amount of dollars. Would it be feasible to lay user charges on some of the waterway operators to help defray the costs of some of these improvements?

That's really not a matter in which I've been involved officially, although I have been responsible for the operation of the waterways. I understand, however, that current administration policy favors some user fees or some use charges to offset operation and maintenance costs. My personal feeling is these charges will be passed on directly to the consumers. Since the waterway operators constitute a very competitive industry, there really isn't enough profit in their operations to allow them to absorb the charges. Thus the charges must be added to the cost of the products being transported, which means the consumer, in effect, will pay the user fees. Fees would probably have some effect on our international trade situation also, since our export costs would have to be increased as well. I am inclined to think it would be to



the users' advantage if they offered a proposal. I would hope that whatever the alternate proposal would be, we wouldn't have to collect the money.

While NEPA introduced a national policy of concern for the overall environment, the Water Resources Development Act of 1974 was more specific in its requirements, including nonstructural flood control measures. What progress has the Corps made?

Both the policy and conception of nonstructural solution are excellent. That message has been well distributed throughout the Corps. From a practical standpoint, though, we don't seem to be getting very far because of the cost sharing features. To date there's been no national policy set on what the cost sharing should be on nonstructural measures. Admittedly, the law sets forth some limits, but the U.S. Water Resources Council has the chore of coming up with a position which will be applicable to all elements of the executive branch. As far as I know, the Council has been unsuccessful in getting its recommendations approved. I'm disappointed that progress has been so slow on this feature because

nonstructural measures are so important, but cannot be implemented until the cost sharing problems are resolved.

The 1974 Act also directed the President to look into the Principles and Standards applied to water resource projects, including the discount rates. What impact will this have on Corps projects?

I don't think the national Principles and Standards are going to have any major impact. At first we thought they would be more severe, but now that we've put together our regulations on how to develop the two objectives of *national economic development* and *environmental quality*, we find we can adapt very nicely. One of the things that's attractive to me is that if we do the *environmental quality* analysis properly then the need for a separate environmental impact statement (EIS) on the same project would be lessened. Even if we do not eliminate the EIS itself, we should be able to make the document which we're now preparing much simpler since we would save significant amounts of time and money. Those people interested in the details of environmental assessments can go to the environmental quality part of the project report document itself.

The Corps has traditionally made its flood plain management services, which are nonstructural, available to individual communities upon request. Would this service not become more effective on a regional level?

Definitely, and we need to come to that soon. First, we need the base data so that regional planners can have the information at hand with which to make their plans. The Corps can and should provide this service to the States and other Federal, as well as local, planning agencies. It's important and we really ought to get on with that.

While the public traditionally associates the Corps with flood prevention, not many persons realize the extent of Corps interest in supplying water to regions facing current or future shortages.

There's no question that many regions of the country have potentially critical situations and when drought conditions occur in these regions the problems will appear very rapidly. The most serious situation is right here in Washington. It would be devastating if we had a drought next year during the height of the Bicentennial.

Actually, the whole Northeast region of the United States has a potential water shortage and the Southwest already has its water problems. While there's ample water in the upper Missouri now, there's no reason to think that during a drought that area wouldn't be short

Dredged material converted to manmade island.

also. So you might say the United States has a pending water crisis which would be much more difficult to handle than either the energy or the economic situation which we now have. It's pretty hard to negotiate with Mother Nature when she decides to cut off the supply.

Would it be feasible to help Mother Nature by transporting water from areas of abundance to those of need?

I suppose so, but this is a very complicated subject and making it come true is probably more difficult than the average person might think. For one thing, there's the question of who owns the water. Does it belong to the States? Another problem is embargoes, some Federal, on moving water from certain basins to others, and there are even international agreements which preclude such transbasin shipments. So while it would be feasible from the engineering standpoint, there are political and regional constraints which, for a while at least, present very difficult obstacles.

Besides providing drinking water, will the Corps be able to increase the Nation's supply of electrical energy through further development of hydropower?

Most definitely! A great amount of energy exists in our rivers which could be converted into hydroelectric power. We need to take a hard look at the proper role of hydroelectric power, including pumped storage, in meeting the Nation's electric energy demands. We already know that hydroelectric developments provide a clean source of electric energy with little, if any, consumption or degradation of the water resource itself. There are great opportunities for hydroelectric power development in Alaska as well as the Pacific Northwest, some potential on the Missouri River, and in some of the existing facilities in the Southeast. Speaking comparatively, hydroelectric energy is a clean and nonconsumptive form of energy.

When construction projects disturb existing fish and wildlife habitat, what are the ecological results?

Generally speaking, the effect has been to change the fish and wildlife populations which were in a region before the project was developed. That's particularly true with our lake projects. With the help of the Fish and Wildlife Service we have replaced what was there with, in many cases, a better fish and wildlife population. In all cases that I'm aware of, once a project is in operation, the Corps has given constant attention to the matter of the species of fish and wildlife which choose to reside in that area.

On the human side, how will growth in visitations be managed?

We've learned an awful lot in the last 30 years or so about operating reservoirs and what masses of people can do to these pleasant and attractive areas. I think





WATER SPECTRUM, FALL 1975

the principal direction which lakeshore management will take from now on will be to preserve public lands so that they may be used for the pleasure of everyone. That will be done by limiting commercial uses to certain areas, limiting boat docks and recreation vehicles to other areas, and leaving some areas in a natural state. The thrust of lakeshore management, generally speaking, will be to keep an area from becoming degraded so that, over the long pull, public lands will provide the greatest amount of pleasure and use for all elements of the public.

Your concern over public lands indicates that appropriate public facilities should be included in the Corps' future lakeshore management plans.

They are part of our plans. However, facilities of the type you are referring to are provided only where a local non-Federal agency contributes 50 percent of the cost. Therefore, the extent to which these plans are implemented is dependent upon how much money other than Federal agencies are willing to put into them. The growing public demand for campsites, picnic areas and other facilities greatly exceeds availability and these areas will have to be expanded to meet local area requirements.

Although not as visible as those projects producing man-made lakes, the urban studies program appears to be even more multipurpose in nature.

Our urban study program is really a comprehensive analysis of all the water and related land problems in a highly populated, highly industrialized area. That includes items such as flood control, water supply, recreation, water quality, in some cases navigation, and in other cases hydroelectric power. Whatever the existing water and land related problems or opportunities might be, they are folded into an overall study for a given urban area.

Which of these items would you say appear to be receiving the most emphasis today?

That's very hard to generalize since the cities are all different and their water situations are all different. I think, certainly, water quality has to be put high on the list because of the law (P.L. 92-500) which says the cities will have reached certain levels of water quality and treatment facilities by certain fixed dates.

There are several new directions the Corps has been asked to pursue by Congress, such as streambank and shoreline erosion research, a new 2-stage authorization procedure and, perhaps most important, the deauthorization procedure. How are we progressing?

Let's take them in reverse order. The deauthorization procedure is moving very well. The Secretary of the Army has submitted a list of about 350 projects prepared by the Chief of Engineers that are recommended for deauthorization. I anticipate that Congress will

A better fish and wildlife population is a major concern to the Corps.



allow most, if not all, of these to be deauthorized by not overruling the recommendations. Next year there will be another list and the year after that and so forth. So that's working well.

The 2-stage authorization procedure has many good features to it. So far as we know, it's also working well, and I phrase it that way simply because we have not yet had a project move all the way through the system and back to the Congress under the 2-stage procedure. We see no great problem once we get all the pieces sorted out.

The third item is streambank and shoreline erosion, and this one, I must say, has been fairly disappointing to me because we've not had the funds to undertake these research programs as we should have. In the shoreline erosion area we have no money appropriated to date. We do have an advisory panel appointed as the law requires and we have taken \$100,000 from other sources just to keep that panel working. As far as anything specific is concerned—such as picking a demonstration site—no decision has been made. The same thing is true, generally, with streambank erosion. There just haven't been any funds appropriated to allow us to proceed with these new initiatives.

Having briefly explored the major challenges you have faced as Director of Civil Works, it now seems appropriate to ask for your impression of the Corps' future Civil Works mission.

We should start with what we have as our current missions. Traditionally, that includes navigation, flood control and hydroelectric power. Navigation, I feel certain, will remain an integral part of the Nation's economic transportation system, but its place in the system will depend upon the national transportation policy and the relationship of water to other transportation modes. I think there's a definite continuing requirement here, so the Corps' mission in the navigation field probably will stay pretty active.

Flood control, though, is to me the one area where the changes in philosophy and approach have to be most significant and perhaps the most immediate. I feel that national attitudes no longer accept retention structures as the singularly correct solution to flood problems. Only after we have thoroughly exhausted all other alternatives, in particular those labeled non-structural solutions, will the public accept structural solutions. This is quite a change in the national attitude which existed just 10 or 15 years ago. As a result, I see the Corps role in flood control changing significantly.

Allied with flood control is hydroelectric power. That seems to remain a priority issue because of the energy

Energy found in nature can be converted into clean, nonconsumptive hydroelectric power.



shortage. I feel that we will be providing more hydroelectric power both in existing and new structures. Hydroelectric power, like water supply, comes off a little better in the area of structural solutions than does flood control, simply because the water supply obviously must be obtained by storing water and hydroelectric power is most efficiently produced when water is impounded for the purpose of generating great amounts of energy during a release.

Looking beyond the structural areas, or what might be called the traditional missions which involve structural work, I see a great opportunity and a need for the Corps of Engineers to provide software service. By that I mean engineering advice that will help States develop their own State water plans. I'm particularly concerned that we look at our capability to resolve the quality of life issues, not only for today, but for the long term; also that we use our talents in developing flood plain data and environmental inventories, so that planners on a national, regional and even local basis have at hand good data on what's out there in order to make proper decisions in developing our water resources.

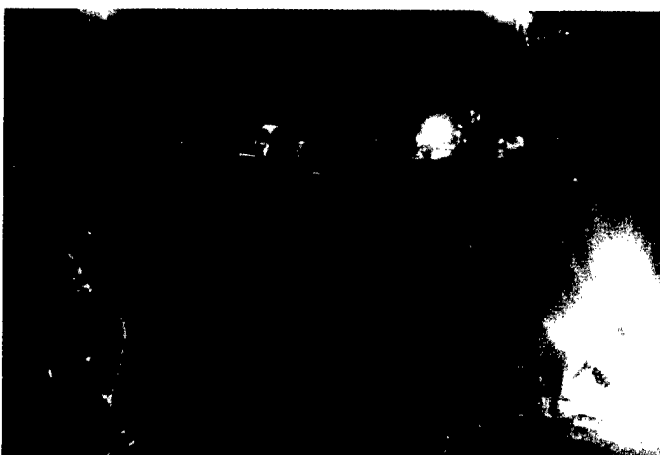
This software service would have its first priority input in urban areas, because there's where the prob-

lems already exist. The urban areas are a particular problem because our planning processes take so long that by the time we get an answer the going-in situation has changed. We have to be able to translate software planning into action much quicker than we have in the past. The next area where I see software service having immediate application is one I've already mentioned—the flood plain information and environmental inventory arena.

Another area of great opportunity is using the maintenance of our waterways as a catalyst for proper development of our river basins, and particularly the water courses themselves. I believe that working in conjunction with State and local fish and wildlife interests, the Department of the Interior and others, our activities in removing deposition from authorized waterways and maintaining these waterways can lead to optimum development of the physical features adjacent to our waterways. There's no reason why we cannot open up tributary areas in order to place the dredged material from the waterways in preselected sites. This would not only provide fish and wildlife habitat, but excellent recreation areas, and generally raise the environmental, industrial

Meeting growing demands for recreational facilities depends on cost-sharing.

Effective water supply sometimes requires impoundment.



and social utilization of these water courses to their most attractive and optimum levels.

What I've covered so far really are not new missions for the Corps. We are just approaching tomorrow from a better angle, using the authorities which the Congress already has given us for tending to our Nation's water needs. Beyond that, the U.S. Army Corps of Engineers is available for a variety of future challenges, just as it has been in the past. We can undertake additional tasks with our existing field organization and our engineering and planning talents if, in the judgment of the Congress and the executive branch, such use would serve the national interest.

If I may be permitted an additional observation along that theme, I see in the great planning, engineering and construction talents of the Civil Works ele-

ment in the Corps of Engineers a unique management capability strong in experience and organization. I'd like to think these capacities are available to everyone—other elements of Federal Government as well as the States and local agencies—to assist in resolving the Nation's problems, whatever they may be, but especially those related to water. ■

Appendix C
“Maintaining Engineer Readiness”
The Military Engineer
January/February 1977

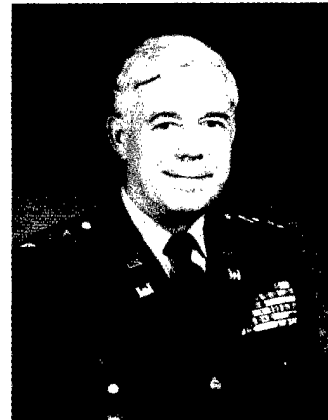
"To be prepared for war is the most effectual means of preserving the peace."

George Washington

Maintaining Engineer Readiness

By Lt. Gen. J.W. Morris
Chief of Engineers, United States Army

In a future war, the United States probably will not be afforded a lengthy mobilization period. As a result, the peacetime Army must be ready to assume a wartime posture quickly and effectively. The Army Corps of Engineers has a vital role in maintaining the national strength in war or peace. This includes the traditional combat engineering and construction support provided to the Army by Engineer troop units. It also includes a lesser known, but nonetheless important, element—maintaining a nationwide construction organization that can be rapidly mobilized to support a war effort. During peacetime, much of the Corps' effort is devoted to the civil works program. In war, this engineering and construction capability can be quickly and efficiently shifted to military projects, as was clearly demonstrated during World War II and the Korean War. Officers who had served in the civil works program were well prepared to assume the complex responsibilities of supporting a large Army in war. Today, the Corps is dedicated to ensuring the continuation of this unique mobilization capability.



Lt. Gen. John W. Morris

THROUGHOUT most of its history, the Corps has been active in civil works construction. This mission led to the establishment of a highly decentralized, nationwide organization capable of performing large-scale construction projects. By 1939, the field organization of the Corps had grown to 11 Divisions with 46 Districts, staffed by 225 officers and 49,000 civilians. The primary missions were execution of the civil works program and the construction of fortifications in the United States. The Corps also had the wartime function of military engineering and construction in theaters of operation.

After the war began in Europe, the military construction program increased greatly. The Quartermaster Corps, the agency responsible for military construction in the United States, was handicapped in its ability to expand with this program because its field organization and experience in large-scale construction were limited. Meanwhile, Congressional appropriations for civil works projects were lessening as preparations for war assumed greater importance. To alleviate some of the pressure on the Quartermaster and to take advantage of the existing Engineer capabilities of a skilled work force and a nationwide organization, the Chief of Staff of the Army assigned Army Air Corps construction to the Corps of Engineers in November 1940. Within two weeks, the Corps began taking over projects already under way and by April 1941 had assumed \$200 million in Air Corps construction. A year after the transfer, the Engineers had put in place \$396 million in construction. The Corps' outstanding performance led Secretary of War Henry L. Stimson to write:

"It has performed these heavy tasks with its usual efficiency and thoroughness."

Mission expanded

The total military construction mission was reassigned from the Quartermaster Corps to the Corps of Engineers on December 16, 1941. The consolidation of the Quartermaster's Construction Division and the Corps of Engineers brought together nearly 600,000 people, including contractor personnel, who formed probably the world's largest construction organization.

The Corps was quickly involved in a massive construction program to support the war effort. In the seven months following Pearl Harbor, Congress appropriated over \$10 billion in construction funds. The civil works structure was quickly adapted to absorb this newly acquired workload. Division and District boundaries were redrawn and headquarters relocated to accommodate changing requirements. New Districts were created and old ones abolished as dictated by the volume and location of work. Prewar strength of 49,000 was expanded to 185,000 by mid-1942. On the first anniversary of the bombing of Pearl Harbor, the war construction program, authorized at over \$10 billion, was 85 percent complete.

The effect of this rapid expansion can be visualized by examining a typical District. In December 1940, the Tulsa District had 499 people engaged in civil works programs. With the assignment of several Air Corps projects, the District grew to 800 people in six months. Growth increased significantly after Pearl Harbor, and

Reprinted from **THE MILITARY ENGINEER** for January-February, 1977

Copyright by The Society of American Military Engineers



One of the elements of the Corps' wartime Manhattan Project

the District reached a peak strength of 3,250 in 1942. During the war years, the Tulsa District placed \$800 million in military construction.

In January 1942, lines of communication across the Pacific to Australia were threatened by the Japanese advance. At this time, the civil works organization based at Honolulu, working with American construction firms available in the area, was able to develop the so-called Southwest Passage, a chain of airfields from Hawaii, Canton Island, Fiji, and New Caledonia to Australia and the Philippines. This combined organization also supervised construction projects in Australia for the United States Army forces there.

The Corps' most notable achievement during the war was the creation of the atomic bomb. In August 1942, the Manhattan District was organized to design and construct the facilities necessary to support the development of the bomb. Much of its staff was drawn from existing Districts. In September 1942, Gen. Leslie R. Groves, an Engineer officer, was appointed the director of the Manhattan Project, with the responsibility of creating the atomic bomb and directing all aspects of the project. This \$2 billion effort included the acquisition of over 530,000 acres of real estate, the construction of industrial facilities, and the direction of 45,000 military, civilian, and contractor personnel.

During World War II, the Corps executed an \$11 billion domestic military construction program that was instrumental in assuring victory in the war. With its flexibility to adapt to changing missions, the Corps was able to deliver the facilities needed to support a four-million-man Army.

Mobilized again

At the end of World War II, the Corps briefly returned to its normal peacetime activities. Following the invasion of South Korea in 1950, the Corps again undertook a massive military construction program by shifting its work force from civil works to military construc-

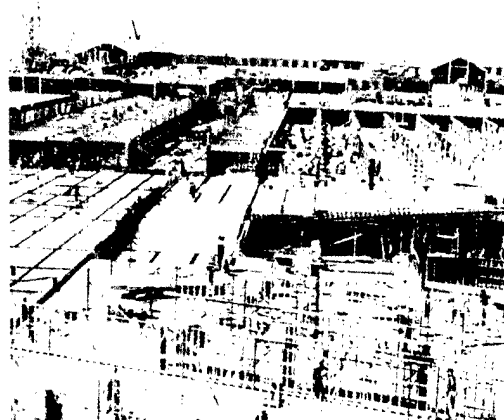
tion. By 1952, the program had grown to \$2.8 billion. This work included the construction of five Air Force bases in Morocco. A new District was created and staffed by personnel from existing Districts. It was given six months to bring these bases to a state of at least minimum readiness. The deadline was met; in fact, planes began landing at one of the bases only 64 days after construction began.

The Tulsa and Mobile Districts, along with their sister Districts, again shifted their efforts from civil works to military construction. The Tulsa District, from a 1950 workload of \$17 million in civil works and \$1 million in military construction, made a smooth transition to a military construction program and placed about \$150 million in military construction contracts during the war. The Mobile District underwent a similar transformation as its military program grew from \$4 million to \$100 million and its work force devoted to the military construction effort expanded from 91 to 413.

Twice in less than 20 years, teams of military and civilian men and women had shifted their efforts from civil works to military construction, thus showing the value of having an existing engineering and construction organization that could be mobilized rapidly to meet the nation's military construction needs during wartime.

Civil works training

The civil works program of the Corps of Engineers provides unique training opportunities for officers. A veteran of the 1927 Mississippi River flood said of the experience: "In physical and mental strain, a prolonged high-water fight on threatened levees can only be compared with real war." In 1932, Gen. Douglas MacArthur, who was a Corps of Engineers officer, recognized the importance of this training when he said that the civil works program "furnishes officers of the Corps with the finest possible peacetime training in the manifold construction, engineering, and procurement tasks that devolve upon them in time of war."



The Pentagon was completed by the Corps in 1943

The Military Engineer, January-February, 1977

The importance of this training was realized in World War II. Many officers assumed positions where their experience in civil works was invaluable. In 1947, General of the Army Dwight D. Eisenhower said: "I believe the rivers and harbors (program) does more to train our Engineers in the large conceptions by which they did their job in war than anything else they could do." General Eisenhower's views were echoed by the British Engineer-in-Chief who wrote: "I have always been firmly of the opinion that this type of training is not only desirable but essential, and my experience in two large theaters during World War II most fully confirmed that view. There was no type of civil works project that did not have its counterpart in war, and often on a huge scale."

These views on the carryover of civil works experience into wartime situations are emphasized in the words of Brig. Gen. B.L. Robinson, former Assistant District Engineer in Honolulu.

On the morning of December 7, 1941, within less than an hour after the Sunday attack on Pearl Harbor by the Japanese, the District Engineer and I proceeded to mobilize the District headquarters. . . . A provisional regiment was formed of civilian District and contractors' employees. Arms and munitions were procured and issued. The unit was assigned, under military command, to a sector of Honolulu for beach defense, at that time it being anticipated that a Japanese force might attempt a landing.

Knowing that engineer material would be in short supply and heavy demand, major construction materials such as lumber, cement and hardware in the hands of commercial firms were impounded by blanket purchase order for immediate use by the Army, Navy, and Air Force. The District by similar action impounded and rationed all fuel supplies. Contractors' equipment and forces engaged on construction of permanent buildings for army installations were diverted to the construction of fortifications and other facilities for troops. In fact, all construction activities of a permanent nature were stopped and forces instantly diverted to the active support of military activities. This transition, maintaining orderly contractual relationships, was made possible by the fact that the Engineer District, while essentially a civilian organization, was under the control of the military.

The Cold War

The Corps has not been mobilized since the Korean War, but it has taken on several large construction programs essential to the national interest in the interval. The launching of Sputnik I in 1957 shocked the American people and focused attention on the serious gap that existed between the American and Russian space programs. In 1958, the National Aeronautics and Space Administration (NASA) was created, and an urgent program for the early launching of American satellites was begun. The Corps was selected by NASA to serve as its prime construction agent in the billion dollar program to build ground launch and support facilities. NASA's reasons for selecting the Corps illustrate the value of an existing engineering and construction organization with capabilities for major construction. The reasons include:

- The Corps was the largest federal agency possessing an engineering and construction organization with a nationwide network of field offices.

- It had demonstrated in two world wars and in lesser conflicts its ability to organize, design, and effectively direct the construction of military and public works programs.

- It enjoyed an excellent reputation and had earned the respect of the engineering profession, the construction industry, and the scientific community.

- It had acquired extensive experience over the years in the negotiation and administration of thousands of contracts annually.

- Its network of Division and District offices had accumulated an intimate working knowledge of local conditions, resources, and capabilities in each of the geographical areas assigned. It maintained excellent relations with local officials and governmental bodies.

- It was to a great extent self-sufficient in its operations in that it was organized so as to perform its own fiscal, supply, legal, real estate, contract, and other administrative services without dependence on other agencies.

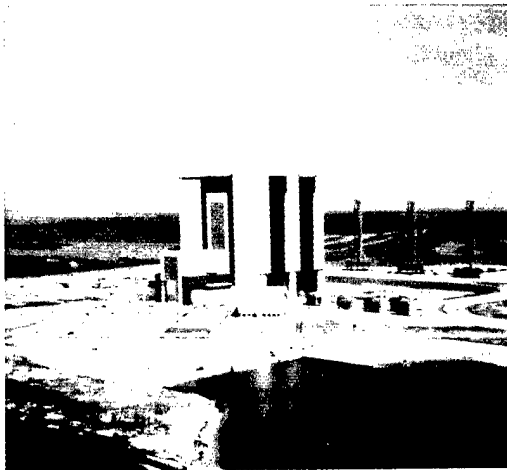
- Timing and cost considerations made it impractical and uneconomical for NASA to attempt to develop its own engineering and construction ability which could have duplicated, at great cost, that ability already possessed by the Corps.

At the height of the construction program, five Divisions and eight Districts were participants. The Canal District was organized solely to support the space program at the Kennedy Space Center. The program included the construction of facilities at the Kennedy Space Center, the Mississippi Test Facility, the Manned Spacecraft Center at Houston, the Marshall Space Flight Center at Huntsville, the White Sands Missile Range, the NASA Flight Research Center at Edwards Air Force Base, the Sacramento Test Facility, and the Electronic Research Center at Boston.

Similar large-scale construction efforts have since been conducted in support of the ICBM and Safeguard programs. These major peacetime efforts show the



The power-generating capacity of the multipurpose Dworshak Dam in Idaho is currently being expanded



Vertical Assembly Building at the Kennedy Space Center was the largest building constructed in the world

Corps' ability to respond effectively to major engineering challenges facing the nation. The fact that other government agencies selected the Corps to perform these projects demonstrates their recognition of the Corps' unique capabilities. In each instance, many key engineers were transferred from other Corps Districts and Divisions on short notice.

The Corps today

The missions of the Corps of Engineers are being carried out by an organization consisting of a headquarters in Washington, D.C., and 14 Divisions, 39 Districts, and five Research and Development Laboratories throughout the United States and in selected areas overseas. Eleven Divisions and 36 Districts are involved in the civil works program, and 10 Divisions and 14 Districts are engaged in military construction. This organization is staffed by 860 military and 42,000 civilian personnel.

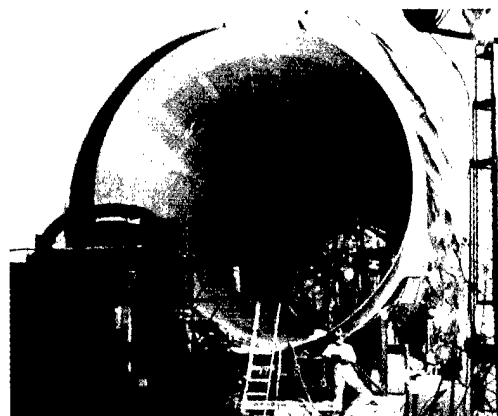
The civil works program is more comprehensive and complex today than ever before. The FY 1977 program is funded at \$2.6 billion and is executed by three-quarters of the Corps' work force. It focuses on the efficient development of the nation's water resources. Navigation is the oldest civil works function. Water carriers, the major movers of energy supplies, fertilizers, and agricultural commodities, provide the least expensive and least energy consumptive mode of transportation. The Corps is responsible for ensuring the orderly development of the inland waterways system as an integral part of the over-all transportation network. This includes not only the construction of new facilities, but also the maintenance, operation, and improvement of existing locks and dams.

Through its nationwide organization, the Corps assists in recovery from various national disasters. More importantly, preventive measures undertaken since the 1930's have resulted in an estimated savings of \$6 for every dollar invested. In recent years, the emphasis

has shifted from structural to nonstructural alternatives for flood damage prevention. The nonstructural solution provides for the preservation of the undeveloped flood plain, or, if it is occupied, moving people and buildings from the area subject to flooding. This allows the flood plain to be retained as a recreation site or green area that will not be adversely affected by periodic flooding. When a dam is required for flood protection, it is always developed as a multipurpose project that provides other benefits such as water supply, hydroelectric power, fish and wildlife enhancement, and recreation.

One of the most complex aspects of the civil works program is balancing developmental needs against environmental concerns. The Corps assesses the environmental impact of each project and incorporates methods of mitigating damage into the design. In addition, it is actively engaged in protecting America's valuable wetlands and in regulating construction, discharges, and dredging in the nation's waters. The Corps is dedicated to preserving and protecting our natural resources for the use and enjoyment of future generations.

The civil works organization retains the same flexible, highly decentralized structure that has served our nation so admirably in war and peace. It is staffed by dedicated professionals possessing a wide range of planning, engineering, and construction management skills. The mobilization of manpower, materials, and equipment for a major construction effort in peace involves many of the same problems and requires many of the same skills needed to perform massive military construction programs and to manage large-scale logistics efforts in wartime. The civil works program offers a unique training opportunity for Engineer officers. The civil works organization provides a rapid mobilization capability that may prove decisive in a future war. If the need should arise, the Army Corps of Engineers stands ready to switch from peacetime civil works activities to support of the National Defense in war and to provide the engineering and construction base so necessary for success on the modern battlefield.



Diversion tunnel under construction at New Melones Dam, California, another of the Corps' multipurpose dams

Appendix D
“The Corps of Engineers and the American Environment”
August 1978

The Corps of Engineers and the American Environment: Past, Present, and Future

By Lieutenant General J.W. Morris*
Chief of Engineers, United States Army

In Washington, D.C., my office desk sits between two framed quotations by two great Americans; each quotation describes a representative mission of the Army Corps of Engineers. One of these is by Mark Twain, who said, in 1882:

The Military Engineers have taken upon their shoulders the job of making the Mississippi over again—a job transcended in size only by the original job of creating it.

The other is an 1895 quotation from John Muir, the famous turn of the century conservationist and founder of the Sierra Club:

The best service in forest protection, almost the only efficient service, is that rendered by the military. For many years they have guarded the great Yellowstone Park, and now they are guarding Yosemite. They have found it a desert, as far as underbrush, grass and flowers are concerned, but in two years the skin of the mountains is healthy again. Blessings on Uncle Sam's soldiers as they have done the job well, and every pine tree is waving its arms for joy.

To me, these two quotations represent the complementary missions of the Corps of Engineers in the past, present and future: to develop America's water resources and to perform engineering missions so as to contribute to the nation's economic well-being; and to preserve and enhance the quality of our natural environment, ensuring a more fulfilling life for every American. Because the Corps' developmental mission is relatively well understood, I will here emphasize the Corps' environmental record and goals.

In the United States today most of our citizens have developed at least a degree of concern for environmental quality. Public opinion polls regularly disclose that a majority of Americans want to breathe clean air, enjoy waters free of pollutants, have access to parks and open space, preserve wildlife, and control excess noise. We want to balance economic development with environmental quality. These beliefs follow from our realization that, if we cannot have both a functioning economy and a

livable environment, there can be little real value in an ever-increasing Gross National Product. If the average American's "quality of life" must deteriorate as our economy and population grow, then "growth" can hardly be desirable.

Because some degree of "environmental consciousness" has become commonplace, some of our citizens find it hard to understand why many of our institutions and government agencies have not always been closely identified with these currently accepted environmental policies. In fact, the more strident environmentalists do not hide their distaste and contempt for large segments of American industry and for many governmental agencies which traditionally have emphasized economic development goals rather than environmental preservation.

Although I think I understand such extreme views, I would remind those who hold them that institutions, economic systems, and agencies within democratic governments almost always reflect the predominant economic and social forces of their age; very rarely indeed can a government agency give complete deference to the values of a future generation in preference to those of the current generation. And the fact is that "environmentalism" has become a truly powerful force in the United States only in relatively recent times.

A Brief History of America's Environment

From the earliest years when European cultures came to the New World until modern times, the primary motivation of almost all of the new Euro-Americans was to use, develop, and exploit the natural resources of a virgin land. The settlers at Jamestown and the Pilgrim Fathers and Puritans in New England generally regarded America's wilderness forests as "howling wastes": hostile, dangerous, and worthless until subdued and used by farmers, woodcutters, and mill-operators. Thus from the Europeans' arrival in the 16th Century through the middle of the 20th Century, the story of the American environment was the story of explosive human population growth, conversion of wilderness into farms, towns, and factories, and rapid development and consumption of natural resources. The tragic examples of waste, greed, and exploitation are well-known and do not need explanation: the extermination of immense numbers of passenger pigeons, bison, and waterfowl; wasteful leveling of our virgin forests by fire and ax; wind and water

*General Morris expresses appreciation to Lance D. Wood of the Office of the Chief Counsel, Office of the Chief of Engineers, whose comprehensive research made this article possible.

Based on an address prepared for presentation to the Class of 1978, Industrial College of the Armed Forces, Washington, D.C.

erosion of millions of acres of once-fertile farmland; thoughtless drainage or filling of productive wetlands; the poisoning of our waters, air, and soil with industrial and agricultural pollutants and raw sewage; the sprawl of cities and suburbs over farmland and open space. The list of historic environmental abuses is almost endless.

But despite the misuse of the American environment from the earliest days onward, there was no significant "environmental movement" in the United States until very recently. One extraordinary indication of this is that no really enforceable or effective Federal law was enacted to deal with the national problems of water, air, or noise pollution prior to the 1970's. Similarly, preservation of the few remaining tracts of American wilderness or wild rivers, and of endangered species of wildlife, was not even a legally recognized objective until the late 1960's.

It is true that a few highly exceptional individuals spoke out during the 19th Century against the degradation and exploitation of the American environment; but we remember those individuals today precisely because their views were advanced far beyond their respective eras. Henry David Thoreau wrote eloquently of nature, the wilderness, and an environmental ethic in the middle of the 19th Century. But he and his works were generally ignored or ridiculed during his own lifetime, while his contemporaries settled the American West, cut and burned the remaining forests, and exterminated the bison. John James Audubon painted wonderful pictures of American wildlife in the early and middle 1800's. But the paying market for his pictures was largely that in Europe, and practically none of his fellow Americans gave a thought to preserving the continent's disappearing wildlife heritage, even as it was lost to market hunters and destruction of habitat. A few 19th Century painters admired and reproduced the scenic American landscape. But the great majority of Americans apparently thought that "appreciation of the landscape itself, apart from its practical uses (was) pointless and effete."¹

The first modest, yet significant, achievements for conservation were almost fortuitous developments. A few extraordinary men, such as John Muir, convinced a few enlightened Federal officials to set aside a few areas of the public domain as our first national parks and monuments. Later, through the accident of President McKinley's assassination, the United States unexpectedly found itself with its first "conservationist" president—Theodore Roosevelt. Despite ferocious opposition from entrenched economic interests, Roosevelt appointed officials with advanced conservationist ideas—such as Gifford Pinchot of the Forest Service—and continued to set aside national monuments and parks.

From time to time thereafter the incipient U.S. conservation movement had modest periods of accomplishment—additional public lands were set aside in every president's administration from Franklin Roosevelt's onward; and the Fish and Wildlife Coordination Act expressed but did not effectuate a pro-wildlife policy. But for the most part America continued throughout the 19th and most of the 20th Centuries to do "business as usual," with our preeminent moving force being that of economic development. A tiny band of American conservationists did plead for anti-pollution laws, for preserva-



Henry David Thoreau was one of the few 19th Century Americans to espouse an environmental ethic.

tion of wetlands, for control of urban sprawl. But they were generally ignored and scorned by the American macrocosm as cranks and eccentrics; most of their pleas were drowned out by the roar of the American economy in operation.

The dominant American ethic of economic growth and development can be explained in many ways, of course. As far back as the history of Western Man discloses, our culture has fostered acquisitiveness, a taste for material comfort, an urge to master natural forces, and relative unconcern about the well-being of wild animals, trees, or even aboriginal men. The specific Western civilization which evolved in North America has long regarded the vast natural resources of this continent as inexhaustible, and has used and wasted them accordingly. Only the long-delayed realization that these resources are at last being outstripped by population growth and our rate of consumption has led to the unwelcome and grudging recognition of "the limits to growth."

Emergence of the Environmental Movement

Not until the pollution of water, soil, and air threatened literally to kill large numbers of Americans with deadly poisons did the American public and their governmental officials begin to give serious attention to the state of our neglected environment. Perhaps the most representative distress signal by which the new "environmentalists" captured the attention of the press, the public, and then the government was that alarming book: *Silent Spring*, by the late Dr. Rachel Carson, first published in 1962. That seminal publication inspired an international uproar which grew in size and intensity through the decade of the 1960's, culminating in the

spirit of "Earth Day" observances. Agree or not with Dr. Carson's carefully-developed case against persistent pesticides which accumulate in the environment, eventually her basic recommendations were accepted and enacted into law by the Congress and EPA regulations.² *Silent Spring* was an avant-courier of the great American environmental movement of the 1970's, which eventually gave us the Environmental Protection Agency, the National Environmental Policy Act,³ the Council on Environmental Quality, the Clean Air Act Amendments of 1970,⁴ the Federal Water Pollution Control Act Amendments of 1972,⁵ the Noise Control Act of 1972,⁶ and the Endangered Species Act of 1973⁷—to name the more prominent ones.

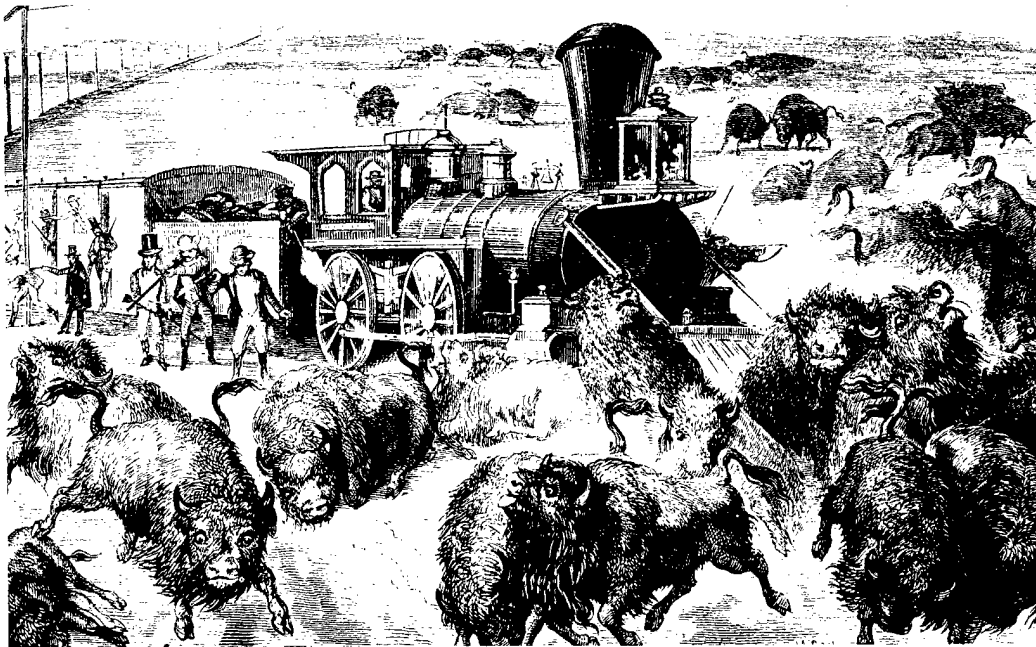
Today the environmental movement is becoming institutionalized at all levels of American government and in innumerable private organizations such as the National and State Audubon Societies, the Sierra Club, the National Wildlife Federation, the Natural Resources Defense Council, the Environmental Defense Fund, and Zero Population Growth. Nevertheless, the battle to save America's remaining natural environment has only been joined. We need more effective national programs in the United States if we are to preserve our remaining farmland and natural habitats from sprawling suburbs and recreational-home developments, to dampen the explosive population growth rate of the U.S.A. and the world, to effect widespread conservation of energy, or to solve other environmental problems. Reviewing the history of the American environment from 1492 to the

present, one can only conclude that the American environmental movement has been "a long time coming" and has by no means achieved its objectives to date.

A Brief History of the Corps' Work in the Environment

With the foregoing background in mind, I would like now to assess the relationship which the Army Corps of Engineers has had over the years with the American environment and the environmental movement. Rather early in the Corps' history, the Congress and a number of presidents gave the Corps many and varied assignments to help develop the newly-founded Republic. The Corps was honored with weighty responsibilities, primarily because its West Point-trained engineers constituted the only U.S. governmental entity possessing the technical competence to deal with many engineering problems in the early 19th Century.

A few examples of 19th Century missions assigned to the Corps suggest the national drive toward economic development which determined priorities for both the Corps and the young Republic which it served. In 1824, Congress authorized President James Monroe to direct Army engineers to survey roads and canals needed for commerce or military purposes.⁸ In that same year Congress authorized the first civil works to improve navigation in the Mississippi and Ohio Rivers,⁹ under which authority the Corps began an extensive program to clear those rivers of snags, floating trees, and sandbars, all of which impeded navigation.



The extermination of the bison is but one example of rampant exploitation in America's history.

Also in 1824, the Corps undertook its first assignments to construct harbor improvements, such as breakwaters, jetties and piers. During the following 30 years, the Corps developed and used technology to deepen and maintain harbor depths by dredging; Corps responsibility for harbors continues to the present day.

In 1825, the Corps was directed to improve the recently-constructed Cumberland Road and to extend it into the new territories of Ohio, Illinois, and Indiana. In 1831, the Army Engineers began to supervise construction of lighthouses to aid navigation and commerce.

In 1837, Corps of Engineers officers studied the navigation potential of the lower Mississippi and recommended deepening that river's navigation channel through dredging. The Corps continued to develop and utilize dredging technology on the Mississippi up to the outbreak of the Civil War.

In 1851, disastrous floods along the Mississippi River led to congressional authorization of the first comprehensive topographic and hydrographic study of a major U.S. river basin. In response, Corps of Engineers officers completed a remarkably advanced technical study of the Mississippi, with recommended improvements for navigation and flood control. The Corps' work on the Mississippi eventually led Congress, in 1879, to create the Mississippi River Commission, which was constituted to include three Corps officers as members.

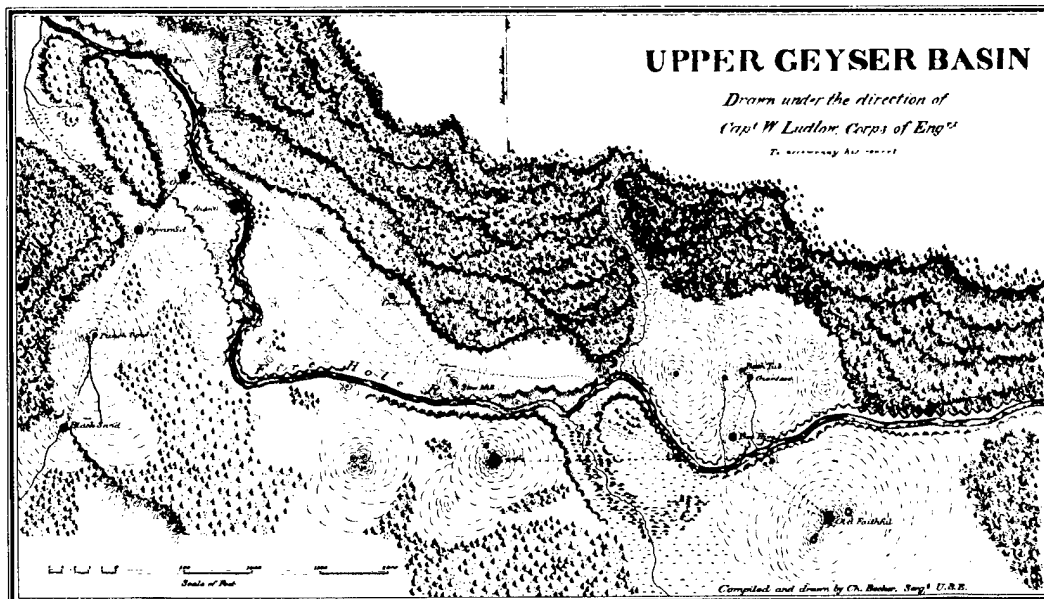
In 1874, Congress gave the Corps extensive responsibilities to modernize, restore, and maintain essential services for the Federal District of Washington, D.C. Among other projects, the Corps completed the Washington Monument, the Lincoln Memorial, the Tidal Basin, and the Washington water supply system.

The Corps of Engineers began to implement major flood control projects in 1882 when Congress authorized the Mississippi River Commission to build flood control levees along the river. In 1907, Army engineers were assigned major responsibilities for construction of the Panama Canal, which resulted in canal operations only six years later, in 1913.

This sketchy outline of early Corps of Engineers assignments rather accurately indicates the goals and needs which motivated the American nation during the 19th and much of the 20th Centuries. Because our young Republic was preoccupied with economic development and growth, the Corps of Engineers carried out missions which reflected those national objectives.

Early Corps Contributions to Environmental Quality

Of course, the Corps did carry out some assignments which clearly were "conservationist" in nature, even during the 19th Century. For example, Army engineers were prime movers in exploring, mapping and convincing the government to preserve a number of natural areas, the most notable being Yellowstone, Yosemite and Sequoia National Parks. Corps of Engineers officers were primarily responsible for protecting those parks from commercial exploitation and vandalism, and for designing roads and bridges which blend harmoniously with their natural settings.¹¹ Furthermore, in the last decade of the 19th Century, Congress directed the Corps to perform a few missions which had "environmental" spin-off benefits. In 1893 Congress asked the Corps to control hydraulic mining abuses in California, where that gold-mining technology threatened to ruin many rivers for



Army Engineers were among the first to explore the Yellowstone area and to urge that it be set aside and protected.

navigation, agriculture, and most other purposes. The Corps officers composing the California Debris Commission regulated hydraulic mining effectively, thereby saving California's rivers from being choked with sand and gravel.¹²

In 1899, the River and Harbor Act authorized the Corps to regulate activities which could obstruct U.S. navigable waters. Although that statute was designed primarily to protect navigation from unregulated bridges, piers, and filling, the broad language of that Act allowed the Corps to control the degradation of U.S. waters from refuse, oil, and other pollutants.¹³ One must recognize, nonetheless, that these environmental accomplishments of the Corps were "ahead of their time" in the sense that they were atypical of the 19th Century. The Corps could only carry out those missions which Congress and the President prescribed, and most of those were intended to "develop" rather than to "preserve" the nation's natural resources.

Theodore Roosevelt's presidency elevated the conservationist ideas of the Progressive Movement to respectability within the Federal Government, so from his administration onward the Corps did at times find opportunities to incorporate conservationist objectives into its projects. For example, the several projects which improved the upper Mississippi River for navigation during the 1930's were carefully designed to create fish and wildlife habitat and human recreation opportunities. Congress had authorized development of the river's 9-foot navigation channel primarily to ensure new economic growth for the region and to give work to many unemployed persons. The project consisted of a series of locks and dams, creating a series of navigation pools, and other appropriate works to ensure a 9-foot channel.

While accomplishing the project's economic goals, the Corps designed the necessary large dams with great

care to stabilize water levels during waterfowl nesting season, and to create 194,000 acres of wildlife refuges from formerly-stagnant sloughs and backwaters. The new water level greatly benefited the river's fish resources and many of the ducks, geese, and shorebirds of the Mississippi wildfowl flyway. Furthermore, the Corps built scenic drives and parks along the new lakes, and planted dogwood, hawthorn, and redbud trees for their beauty and wildlife food value. Famous conservationist Ira Gabrielson said the Corps' project benefited wildlife in the region more than any conservation organization could have, since the Corps had greatly increased wildlife and recreation values along the upper Mississippi.¹⁴

Modern-Day Impacts on the Environment

One thus sees that the Corps' conscientious engineering was assisting the conservation movement for many years before the term "environmentalism" had even been coined. Nevertheless, one must recognize that environmental preservation was never a dominant priority for the United States for the first half of the 20th Century, any more than it had been during the 19th; thus it was not and could not be made a paramount mission of the Corps. Instead, this nation concentrated far more of its resources and attention to economic growth, the improvement of our citizens' material standard of living, and the development of our natural resources, in addition to defending itself during two World Wars, a number of smaller wars, and an uneasy peace. If one merely calls to mind the more noteworthy events and trends of each decade of the 20th Century prior to 1970, one must agree that the economic values and concerns of the 19th Century still predominated. Most of the century's new developments were hardly beneficial to environmental preservation, since most entailed rapid and large-scale application of new technologies which consumed energy voraciously and polluted air, water, and the land itself. The mechanization of transportation via trucks and private autos used up most of our petroleum reserves and inspired the mushrooming of suburbs which covered the American countryside. The technological revolution in American agriculture brought tractors, other extremely costly machinery, and an "agribusiness" founded upon chemical pesticides and massive consumption of energy. American manufacturing industries began to use and discard thousands of new chemicals which polluted our water and air and used up our natural resources rapidly. New packaging and marketing techniques, plus a growing population, led to problems in disposing of solid wastes; and these are but a few examples of 20th Century trends hostile to environmental preservation.

The Corps of Engineers carried out many vital missions from 1900 to 1970, but most of them were "developmental" rather than "environmental" in nature. From Corps efforts in World War II to Corps contributions to the U.S. space program; from continued work for flood control, water supply, and navigation, to creation of hydroelectric energy, the Corps helped build the U.S. economy; but because the public interest priorities were focused on development, the Corps was less frequently expected to preserve the American environment during this period.



The upper Mississippi River navigation project greatly benefited waterfowl by stabilizing water levels during the nesting season and by creating refuge areas.

The Federal Government Accepts Environmentalism

As already mentioned, the decade of the 1960's saw a belated quickening of public and governmental concern for the deteriorating American environment. In 1963 Congress enacted the Clean Air Act, a statute that proved less than effective in ending air pollution, but did reflect Federal concern with the problem.¹⁵ Soon thereafter Congress passed the Water Quality Act of 1965,¹⁶ a law which did not reduce significantly the problem of water pollution, but which was a trial-and-error attempt to improve water quality. In 1968 Congress adopted the Wild and Scenic Rivers Act,¹⁷ which required all Water Resource Development Plans to consider setting aside the river in question as a free-flowing, natural stream.

The growing "environmental movement" achieved a signal victory in 1969 with the passage of the National Environmental Policy Act—NEPA.¹⁸ That now-famous statute also created the Council on Environmental Quality and required preparation of a thorough environmental impact statement for every major Federal action which could have a significant impact on the human environment.

One can hardly overemphasize the value and importance of other environmental legislation which followed NEPA. For example, Congress recognized the inadequacies of earlier statutes, and so adopted the 1970 Clean Air Act Amendments¹⁹ and the 1972 Federal Water Pollution Control Act Amendments;²⁰ those acts finally gave the Federal Government authority to act against air and water pollution. Another example is the 1973 Endangered Species Act,²¹ which established an effective Federal program to preserve species of animals and plants threatened with extinction. In short, the national movement which had been inspired by Carson's *Silent Spring* and by other environmental declarations of the 1960's actually did begin redirecting the course of America's government by the 1970's, ensuring that all

Federal decision-makers would at last consider environmental quality as an important national goal.

An objective evaluation of the Corps of Engineers record during the 1960's and '70's will, I think, demonstrate conclusively that the Corps not only accepted the environmental policies adopted by the Federal Government, but that it actually provided environmental leadership. Before and after the enactment of these Federal environmental laws, the Corps worked to redirect national attention to programs that seek to balance the objectives of development and conservation, rather than merely emphasizing development.

The Corps' New Environmental Consciousness

In this brief article I cannot do more than begin to explain the many measures which the Corps has initiated since the 1960's to elevate environmental quality to an equal status with economic development as a Corps objective. An abbreviated summary must suffice.

One Activity which has led many environmentalists to praise the Corps (and has led some land developers to revile us) has been the Corps' regulatory protection of U.S. waters and wetlands against unjustifiable dredging, filling, and polluting. The Corps has attempted to safeguard U.S. navigable waters since passage of the River and Harbor Act of 1899; however, before the 1960's court decisions and Attorney Generals' opinions restricted Corps regulations to protection of navigation. Nevertheless, once a U.S. Supreme Court decision gave us expanded authority in 1966,²² the Corps began to act against water polluters even if their discharges would not have hindered commercial navigation.

In 1967, the Corps expanded its efforts to stop destructive dredging and filling of productive wetlands and shallow water areas. We initiated a regular practice of denying the "dredge and fill" permits requested by land developers, who seemed intent upon eliminating all our remaining marshes, and the fisheries, wildlife, and clean water resources dependent on them. Under the



The Corps protects U.S. waters and wetlands against unjustifiable dredging and filling.

1967 Memorandum of Understanding between the Army and Interior Departments, both Federal agencies have cooperated to preserve wetlands and estuarine shallows, now recognized as invaluable public resources. In 1968, well before enactment of NEPA, the Corps issued formal regulations²³ to restrict drastically the rate at which wetlands were being converted into parking lots, recreational second home developments, condominium sites, and the like. When the Corps refused to permit dredging and filling of a biologically productive Florida marsh to make a commercial trailer park in 1969, the developer sued us to obtain a permit. In the landmark case of *Zabel v. Tabb*,²⁴ the U.S. Court of Appeals for the Fifth Circuit upheld the Corps permit denial as a valid defense of the public interest in environmental conservation.

The Corps was thus actively preserving the environment even before the President signed NEPA into law in 1970. However, that statute reaffirmed the Corps' already-adopted goals redirecting our policies and programs to give due emphasis to environmental preservation.

The mandates of NEPA and similar environmental statutes encouraged the Corps to re-examine all of its projects in the construction and design stages to seek ways to accommodate environmental quality concerns more effectively. A recent study of Corps civil works projects shows that one-third of the 500 projects under construction, or about to be constructed, were modified to accommodate environmental considerations. Similarly, of 200 studies investigated, about one-third of the final alternatives proposed had been significantly changed during the course of the study to minimize their impact on the environment. In 43 percent of the 102 completed projects investigated, the operators had adopted new procedures to help protect the environment. . . .²⁵

Corps implementation of NEPA also has been lauded by the President's Council on Environmental Quality, which stated in its report on Environmental Impact Statements of March 1976:

The Corps dropped or abandoned work on over a dozen proposed projects because its NEPA process, (not litigation) . . . revealed that significant environmental damage would result. Eleven other projects were stopped until environmental analysis could be completed. The Corps also modified or recommended for deauthorization many more projects, in large part because of NEPA and the EIS requirement These actions have resulted in widespread benefits which are real and substantial but cannot be tallied in monetary terms.

In the years since enactment of NEPA, environmentalism has become increasingly institutionalized as a key component within the Corps of Engineers. The Corps now employs a full array of environmental experts, including biologists, geologists, recreation specialists, wildlife management authorities, hydrologists, and environmental lawyers. This staff and the Corps' new environmental policies continue to generate valuable new programs which will, we hope, benefit the Nation and our environment.

We now advocate non-structural measures to prevent flood losses for all circumstances where flood control dams are not essential—we thus hope to minimize flood damage by restricting development in flood plains. We are studying intensively the traditional Corps practices of dredging navigation channels, and hope to use dredged material as a useful resource to build new wetlands, to reclaim strip-mined areas, and to serve other beneficial purposes. We continue our efforts to prevent the destruction of marshes, swamps and shallow water areas by dredging or filling operations, an enlarged responsibility under Section 404 of the Federal Water Pollution Control Act Amendments of 1972. The few examples cited above at least show that the Corps has been profoundly influenced by the environmental movement which has spread across this country since the 1960's.

The final and, in many ways, the most essential step has been the revision of the procedures by which policies and programs are implemented. During the past six or seven years, we have established completely new guidelines and procedures which now systematically relate all aspects of water resource planning to environmental criteria.

Environmentalism's Recent Difficulties

An objective observer might say that American environmentalism bloomed most luxuriantly from about 1970 until the autumn of 1973. But from the fall and winter of 1973 onward, environmentalism has faced difficult challenges spawned by the oil embargo, the energy crisis, and years of inflation and relative economic stagnation. Not that environmental policies and programs can legitimately be blamed for America's energy and economic troubles; but certain interests in our country have tried to blame environmentalists for obstructing solutions to many of these problems.

Nevertheless, most of the American people maintain faith in the basic environmental ideals conceived in the 1960's and symbolized in the spirit of Earth Day celebrations. Popular support for environmental quality has registered high in public opinion surveys during every year from the late 1960's to the present, even in spite of some economic woes. Perhaps the continuing commitment of so many of our citizens to the environment was a significant element in the election of an avowed environmentalist to the White House, in the person of President Jimmy Carter.

Environmental Prospects for the Future

The administration of President Jimmy Carter already has become a milestone in the history of America's environment. On February 21, 1977, President Carter asked for a careful reappraisal of all water projects authorized for the Corps, the Bureau of Reclamation, the Tennessee Valley Authority, and the Department of Agriculture. Beyond the review of specific projects, a more fundamental goal was to review and reform the standards which have traditionally governed Federal investments in water resource projects.

The reappraisal was welcomed within the Corps of Engineers for two reasons. A similar in-house review and analysis, initiated in 1973, produced several environmentally or economically unsound projects which were dropped from further funding while strengthening confidence in those remaining underway. Also, the time

had come to complete the transition from criteria passed into laws before 1969 to the priorities defined in NEPA and more recent legislation. This Presidential updating did help "clear the air" on the many water resource projects conceived, justified and authorized ten, twenty, or thirty years earlier under different criteria. Unfortunately, so much attention was paid to the few projects that were deleted that the 98% which passed the review were obscured from the public.

Over a year later, in June, 1978, the long awaited Presidential water policy was announced and forwarded to the Congress. Conservation has been added as a specific component of both economic and environmental objectives. Sensitivity to environmental protection is a key element of the new water policy.

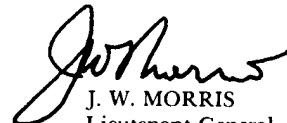
Thus, in total, President Carter's project review, in effect, dropped the curtain on pre-NEPA approaches to project development and now his emerging national policies will open the door to a new era of partnership between environmental and conservation values on the one hand and economic and developmental needs on the other.

The 1970's could well be called the Decade of the Environment in water resource matters and, for that matter, in the history of the Corps of Engineers. No one can argue that this period brought an irreversible impact for change on the direction this nation is to follow in managing its water resources in the future—and, consequently, in the role of the Corps of Engineers, not only as a manager of America's water resources but also as a steward of the American environment. The effect of this change goes

beyond our own shores. Emerging nations have growing needs to develop and use their water resources wisely as their nation-building expands. The lessons learned at home provide the Corps of Engineers excellent credentials to export America's experiences to foreign allies and thus improve the welfare and quality of life of their people while conserving and protecting their natural resources. The look into the future may not be entirely clear, but we can be sure that the road out of the Decade of the Environment and into the 1980's will lead in a different direction than the one which the nation and the Corps of Engineers traveled into the 1970's.

We can also be sure that the Corps of Engineers stands ready and is eager to devote itself to the emerging goals for solving our nation's water resource needs as an environmentally conscious America moves into the future. The Corps of Engineers—like the Army of which it is a part—has a long and proud record of accomplishment and service to the United States and its people.

THE CORPS CARES



J. W. MORRIS
Lieutenant General, USA
Chief of Engineers

¹David Lowenthal, "The American Scene," *The Geographical Review*, Vol. 58, No. 1 (Jan. 1968) p. 72.

²The Federal Environmental Pesticide Control Act (FEPCA), 7 U.S.C. Section 135 *et seq.* (1970), as amended, 7 USCA Sections 136 *et seq.*, and E.P.A. Regulations thereunder.

³P.L. No. 91-190, 42 U.S.C., Sections 4321 *et seq.*

⁴P.L. No. 91-604, 42 U.S.C. Sections 1857 *et seq.* (1970).

⁵P.L. No. 92-500, 33 U.S.C.A. Sections 1251 *et seq.*

⁶P.L. No. 92-574, 42 U.S.C.A. Sections 4901 *et seq.*

⁷16 U.S.C. Sections 688 *et seq.*

⁸Act of April 30, 1824.

⁹Act of May 24, 1824.

¹⁰See generally, *The Corps in Perspective Since 1775*, Publication of U.S. Dept. of the Army, Office of the Chief of Engineers, WASH., D.C. (1976).

¹¹*Id.* also see Baldwin, K.H., *Enchanted Enclosure: the Army Engineers and Yellowstone National Park*, Wash., D.C. (1976).

¹²See 33 U.S.C. Sections 661-687, Act of March 1, 1893, 24 Stat. 507.

¹³See Cowdrey, "Pioneering Environmental Law: The Army Corps of Engineers and the Refuse Act," *Pacific Historical Review*, Vol XLVI, No. 3 (August, 1975).

¹⁴See Gabrielson, *Wildlife Refuges* (New York, 1943), p. 193; "Floods and Wildlife," *Scientific American*, CLVI (Feb. 1937) p. 101; St. Louis and Rock Island District Histories, all developed by Corps of Engineers Historical Division.

¹⁵P.L. No. 88-206, 77 Stat. 392. See Jorling, "The Federal Law of Air Pollution Control," pp. 1059-61 of *Federal Environmental Law* (ELI-West, 1974).

¹⁶P.L. 89-234.

¹⁷16 U.S.C. Sections 1271-1287 (1970).

¹⁸See n. 3, *supra*.

¹⁹*Supra* n. 4.

²⁰*Supra* n. 5.

²¹*Supra* n. 7.

²²*U.S. v. Standard Oil* 384 U.S. 224 (1966).

²³33 CFR 209.120(d) (1968).

²⁴*Zabel v. Tabb*, 450 F.2d 119 (5th Cir. 1970), 401 U.S. 910 (1972).

²⁵Ash, "Three-Year Evolution," *Water Spectrum*, Vol. 5, No. 5 at p. 33.

Appendix E
“Let’s Get Back to Work”
Speech to Water Resources Congress
February 1980

REMARKS BY
LTG J.W. MORRIS
CHIEF OF ENGINEERS, US ARMY
WATER RESOURCES CONGRESS
NEW ORLEANS, LA
15 FEBRUARY 1980

Let's Get Back to Work

The time has come for the Water Resource Developers of this country to start rolling up their sleeves and getting back to work. We have been holding back long enough. In fact, we have been resting so long that we have gotten somewhat out of condition, and before we can truly get the machinery of water resource development into high gear I expect we will have to go through a training period. Two years ago—and even last year to some extent—I did not feel as optimistic or confident as I do now that there will be a major upturn in the development of our nation's water resources. Today I will review with you some of the reasons for this change in attitude and prospects for the years ahead.

In looking back over the resource development program in our country there are several periods which seem to have clear identity and character and which we need to recognize and understand—"Understand" because each has taken a logical place in the process of adjustment associated with American Water Resource Development. These periods are relatively short and generally quite recent.

Some here might be surprised to learn that several major Corps of Engineers projects started as make-work projects in the depth of the Depression: Fort Peck in Montana, Bonneville Dam on the Columbia River, Lake Texoma on the Texas-Oklahoma border and Conchas Dam in New Mexico, to name a few.

The 1927 flood on the Lower Mississippi took over 300 lives and drowned thousands of miles from Cairo to the Gulf, and the hurricane-spawned flood at Lake Okeechobee in 1928 took 1,836 lives. In the 1930s there were floods in Kansas and Pennsylvania, California and Kentucky, New England and in the Ohio and Mississippi Valleys. The latter alone left a million people homeless. At almost the same time our prairies were stripped and dust filled the air and covered the earth over thousands of square miles.

Consequently, from the mid 1930s to mid 1960s there was a strong national movement to control the nation's waters to recover from drought and also to prevent loss of life and property from flooding. There was an equal enthusiasm to develop our waterways and hydroelectric power productivity after World War II. Admittedly, there were lulls during these periods such as the no-new-start policy of President Eisenhower and a very strong opposition to "Pork Barrel" development such as expressed by Harold Ickes and Justice Douglas.

Environmental Period

For a variety of reasons the steam began to go out of the development attitude in the early 1960s. Some of the reasons included the growing competition for monies in Southeast Asia, the national concern over the environment, the emerging preservationist attitudes, and, probably of more importance, the complications of economic analysis and over-emphasis of the value of benefit-cost ratios. In any event, by the late 1960s the passage of the National Environmental Policy Act brought a leave-it-alone philosophy based on a belief that only nature can improve on nature.

We can relate to the 1970s as the decade of the environment for the water programs—a decade of diminishing investment, increased regulation and changing methods of doing business. In my opinion, we have emerged from the 1970s with a 10-year record of lesser growth than our national interest in natural resources deserved. On the positive side, we have accommodated the national environmental objectives in our planning and project development to the point that a return to a period of development could be accommodated with full and proper responsibility for the environmental effects of such development. It was an interesting period. Some of you still remember the Cross Florida Barge Canal and the Alaska Pipeline controversies; Judge Ritchey and Lock and Dam 26; the issue of the constitutionality of the Appropriations Committee authorizing construction; the struggles of Merrimac Park, and the Cache River. And let's not forget the Snail Darter and Mrs. Furbish's Lousewort or some 85 lawsuits. As for regulation, I would guess we issued 175-200,000 permits in the 1970s and probably we spent well over \$1 billion in writing EIS's and in delays in projects associated with NEPA.

Conservation Period

So you may ask are we ready now to embark upon a major investment program in the water resources area? You and I may be, but I do not believe the Nation is ready.

We could surely do it, but there seems to be yet another period through which we must work our way before we have exhausted the alternatives to development, and also learned how to develop our resources in a manner which truly best serves the national interest and future generations. That period, and the one we are entering as we start the decade of the 1980s is a period of conservation.

This new emphasis on conservation may turn out to be one of the most significant features of water resources management and development in the decade ahead. I believe we are going to see the conservation ethic dominate public policy in the eighties as strongly as the environmental ethic dominated the seventies.

At present I cannot tell you how long this will last. However, it will take some time to develop fully and define clearly President Carter's national policy for conservation and then to implement that policy within the Executive Branch.

What is conservation? This is the first question. We in the Corps of Engineers have worked for two years to define conservation and with some success. It will take at least that much longer to educate ourselves and the public even if we assume our definition acceptable. To us, conservation is not merely using less. In the case of water, it also means saving and conserving in an economical fashion. This view is not unanimously accepted.

The conservation period will also involve new and modified activities including a complete review of operating procedures, emergency planning for drought, reuse of waste water, reevaluation of all consumptive uses of water, and others. Certainly, our experiences with energy shortages should be ample cause to manage our water efficiently.

Certainly, another water shortage is in the future. We should soon be able to demonstrate that reductions of the total national need for water by conservation measures, while quite valuable, will in themselves be insufficient to manage the Nation's water resources properly and prepare judiciously for times of shortage. We, as a Nation, will have to do more to assure a good supply of water to all our people. We will have to store during time of plenty, and to transport large quantities of water during times of shortage. But first we must demonstrate that the need surpasses the fruits of merely using less. Then the conservation period will be on its way into our history and in proper balance with the environmental objectives.

Impediments to a Development Investment Program

Besides needing to resolve the requirement that a good national conservation program must precede a new developmental program, there are several remnant procedural problems which also must be solved before we could proceed rapidly with a major investment program. Even if the green light came on tomorrow, we are not ready. These procedural problems include cost sharing and our national policy and review capability.

Cost Sharing: Most of the cost sharing decisions seem either to be behind us or are now being considered by the Congress. After years of fighting, the water resource operators have accepted, happily or otherwise, a waterways user charge. That tough issue is no longer holding good navigation projects hostage. This step alone should clear the way for much needed investments in the Nation's water transportation system. Other cost sharing issues remain. Perhaps the most complicated and delaying is Section 221, which is presently causing 35 states difficulty in agreeing to formal cost sharing with the Federal Government on recreation and water supply. Until this is relieved, we will continue to have many investment opportunities beyond our reach.

National Policy and Review Capability: The water resources program has been delayed all too often because of the absence of a strong decision-making process at the Executive level of Government. The Water Resource Congress has known for years what to do and that is to establish a National Water Resource Council under a strong, separately-appointed leader, comprised of agencies with principal interest in water resource development and which has the responsibility and authority to review policy matters and make decisions.

We must be careful to keep project review separated from policy review or the Water Resources Council, as I envision it, would become bogged down in detailed engineering matters at the expense of policy decisions. Leave the engineering to the agencies that will ultimately be responsible for building the project.

Prioritizing Investments

If we can remove cost sharing constraints and policy delays, then we are well on our way to starting up the water resource development machinery.

But there does remain one additional and critical matter...in many ways the most difficult to handle. It has to do with the credibility not only of the program but of the

individual projects in the minds of the people of the country and, of course, the Congress.

Before I start this, I would like to make it clear that I am not against benefit-cost ratios, and I am certainly not advocating their abandonment.

In recent years I have gradually but surely reached the conclusion that as valuable as the benefit-cost ratio may be, it has become an over-used and misused tool.

Its value in establishing investment priorities has been weakened because few people really understand the details of deriving the benefit-cost ratio. It is a target for attack by those who oppose the project...a target not only because of the arithmetic on which it is based, but also as the symbol of indifference to environmental and other non-computable costs and benefits.

Further, history has proven time and again that economic analyses are so ultraconservative that the costs are invariably on the high side and the benefits, without exception, on the low side.

Last year's flood damage prevention record of \$19.4 billion, compared to total historical federal expenditures for our flood control program of \$18.2 billion, supports the view that we've been conservative overall in estimating the benefits which will be achieved by our projects. Incidentally, that \$18.2 billion expenditure figure includes all design, construction, and operation and maintenance costs incurred through fiscal year 1979.

The authorizing document for the St. Louis, MO, local flood protection project was 1.07 to 1. The project, essentially complete in 1975, cost \$81.3 million. Through 1978 the project had prevented \$292.5 million, in damages over three times the cost of the project.

Additionally, the benefit-cost ratio has led us to make some very serious mistakes. Perhaps I am too hard on the benefit-cost ratio and should be speaking more about its philosophy. Today, every functional element of a project has to be individually supported economically and the last added increment must return greater benefits than its cost. This latter view has frequently caused the head of navigation to be immediately downstream from major man-made or natural obstacles, thereby assuring that any extension of the waterway must first overcome a major cost.

In another case, our economic analyses have forced us to define projects too narrowly. In the Missouri River, the Pick Sloan Plan is really six separate projects

which go from the dam to the headwaters of each of the six reservoirs between Gavins Point and Fort Peck. Initially, this seemed to make good sense. But, in fact, this solution has left relatively short stretches below the dams which are subject to extensive erosion problems and, unfortunately, benefits from the projects have already been allocated. The value of the land eroded cannot offset the extremely high cost of bank protection.

What all of this adds up to is my belief that with the environmental objectives and the conservation objectives, economic analysis is only one part instead of the whole...and, I believe, a less important part than we have allowed it to appear.

Having developed our water resources to the extent that we have, I strongly advocate an approach which resolves problems based on national need rather than on pure economics.

Had this approach been used on the Missouri River, we would have one project from Gavins Point to the headwaters at Fort Peck. Thus the erosion problems, which must now be addressed as individual problems, would have been part of the total project and properly charged against total major project benefits.

Of immediate importance is the ongoing National Navigation Study. My hope is that that study will identify the best water transportation system which the natural features of this country can support. It should be a total system, and we should not require that each and every segment, addition or improvement meet some arbitrary, economic test. We need the entire system to be that which best serves the total national interest.

Similarly, in the hydropower study, we should never repeat the serious errors of the 1960s by failing to provide power because of an economic evaluation predicated on such volatile data as the cost of alternative sources of fuel. This Nation needs all the energy which can be reasonably obtained through competent engineering and design, and we should provide that energy in the national interest. We need not be constrained by economic evaluations other than to identify the least expensive investment to meet the Nation's needs.

In summary, I definitely believe and sense that there is an emerging national attitude which, in due course, will lead us to another period of development of natural resources and particularly water. However, before this attitude bears fruit, we must wring out all of the water to be gained by a well thought out and mature national conservation program. And equally important, we must get our act together on identifying projects which will be developed. These projects will be of a character

which will be fully compatible with the environmental objectives which were clearly established in the 1970s and conservation objectives being developed in the 1980s.

There is important work to be done. And the way now, for the first time in years, seems to be clear. We will get there by keeping our eyes on selected targets and by working diligently within the mainstream of our national objectives. The logic of proper development of our Nation's water resources is now acceptable to most of America. Still, the credibility of the program needs attention. Basically, the likelihood of undertaking such a program will increase proportionately to its credibility...that is, a program which conforms to environmental and conservation objectives and follows an acceptable system for setting investment priorities. That is where the Water Resource Congress can be most effective.

Happily, your efforts are already being felt in the cost sharing, project review and priority-setting areas. I would suggest you keep up the good work to resolve those procedural steps as soon as possible. Then you, as the leader in water resource development undertakings, will be in a good position to roll up your sleeves and get back to work.

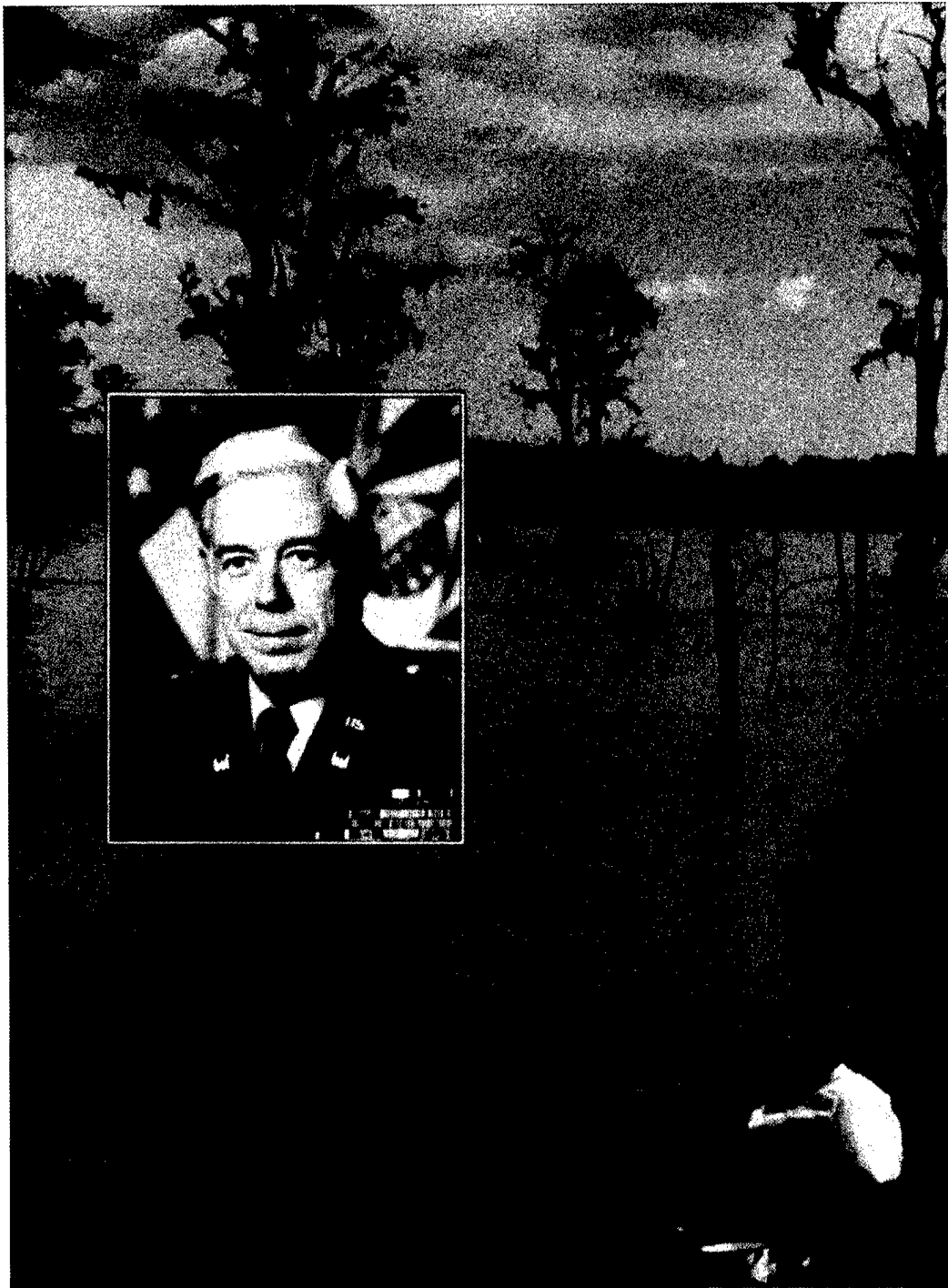
Before concluding, I'd like to tell you about what Senator Bob Kerr of Oklahoma said in a speech to the people at Wichita, Kansas, who were interested in extending navigation on the Arkansas River from Tulsa to Wichita, Kansas. That was on 26 November 1962. At the conclusion of that speech he said something I will always remember. He said, "Be careful what you dream...it might come true."

I think that statement could apply today. I really do believe that the circumstances that we now have in this country are encouraging. We are really conquering environmental problems. We are willing to face the conservation ethic head-on. If we get those two issues behind us and integrate them in our project planning, there is no reason in the world why we cannot get back on a positive investment program in water resource development.

In my judgment, it's dreaming time again...but you'd better be careful.

Thank you very much.

Appendix F
“Reflections: An Interview with the Chief”
Water Spectrum
Fall 1980



Lieutenant General J. W. Morris retired in September as Chief of the U. S. Army Corps of Engineers. Ann Hoffnar of the Corps' Civil Works Directorate talked with the general for *Water Spectrum* readers prior to his departure.

General Morris, from your days as Division Engineer, Missouri River Division, through your days as Chief of Engineers—this roughly corresponds to what you've called the "decade of the environment"—what do you see as the Corps' greatest achievements in the area of environmental protection?

Probably the greatest achievements are not as much related to specific projects—although there are many of those—as to our change in direction, so that we could accommodate national environmental objectives. Changing a large organization is always difficult but we changed our policies and set up the mechanisms to incorporate environmental law into our operations. Environmental planning is now part of our daily business. We have biologists, fish and wildlife experts and scientists from other related fields on our team. Without these changes we could never have moved in the direction that the country wanted to go.

General Morris, in 1975 you told us at *Water Spectrum* that protection of the wetlands must be given high priority. Didn't this turn out to be a bigger task than we anticipated?

The answer is generally yes. Of course, by 1975 we were pretty well aware of what this job was going to involve. When the Federal Water Pollution Control Act Amendments passed in October 1972, we were given increased responsibility, under Section 404, for regulating construction or any other development of the wetlands through a permit process. You may remember our traditional definition of navigable waters was quite restricted. The new law and subsequent court cases broadened "navigable waters"

to include all the waters of the United States. This, in effect, increased our authority to grant permits many fold. At first we really didn't anticipate the complexity of the program. Its size—based on sheer numbers of permit cases—is staggering and many of the cases are quite controversial and complex. Among our most difficult permit decisions were to deny the permit for development on Marco Island, Florida and to approve the permit for a refinery at Newport News, Virginia. There have been many other difficult decisions.

It's been a good program though; I wouldn't want to let the magnitude of the work be misconstrued. I think we've handled it well. The Corps has earned a reputation as fair and thorough throughout government and private industry as well as the environmental community.

You've said that the 80s are going to be a decade of conservation. To our agency of course this primarily means water conservation. I've heard several definitions. Do you have one that's really satisfactory?

Yes, my Civil Works staff has come up with a definition which makes sense to me. It simply says that water conservation is any beneficial reduction in water use or in water losses. Both reduction in use and loss make water for other uses. It's a rather short and I think useable definition.

In his water policy the President has stressed conservation. I believe the Corps has now worked out a plan of action to implement the President's policy. Can you tell me something about it?

Yes, early in his tenure I had an interview with the President. We talked about the future of the Corps and its programs. One of the last things the President said was "I wish you would develop a water conservation program." This request was never put in writing but when you get a request like that from the President it's usually enough. So we have worked very hard in this area since that conversation. First we surveyed the literature and then developed our definition of water conservation. We developed a plan



Art Klein, a Permits Investigator in Buffalo's Regulatory Functions Branch, examines plant life in a Niagara County, New York wetland.

of action for integrating conservation measures into five Civil Works program areas: planning, design and construction, reservoir regulation, operation and maintenance, and regulatory activities. We sent the plan to our field offices in May of 1979 and this May we sent an updated version. Our water conservation program is a solid one that addresses water conservation as part of our own use of water and of our planning for future water needs of the public. We are drawing up contingency plans to make existing Corps projects responsive to short-term water shortages during droughts. We are also considering water conservation in our permit program's public interest review.

Up to the present time the role of the Corps has been limited primarily to water supply as a part of multiple purpose Federal projects. In 1975 you talked about planning for water supply. Will conservation be enough? Do you see our role in water supply increasing in the 80s?

I don't think conservation will be enough. In my talk down in New Orleans earlier this year I said that developing a water conservation plan is just a first step. That done, we will find that our needs still exceed our present supply. Therefore, we'll need to store excess water in time of plenty so that it will be available for shortages. The question then becomes "who's going to develop water supply?" Congress has already selected the Corps of Engineers to study water supply in the northeast United States and I'm of the view that the Corps is probably the best agency, but not the only one, to do it nationwide. I've thought for some years now that we should be given a charter by the congressional authorization committees to undertake a national water supply study. I believe the appropriations committees would be willing to provide the money, but there is a preceding question which relates to authority to make the study. Water supply is certainly in somebody's future; I would hope it will be the Corps'.



Corps park ranger talks with children.

You told the Water Resource Congress in New Orleans in February—I think the same speech you just referred to—that it was time for water resources developers to get back to work. How does this jibe with today's stress on conservation and our country's money problems?

It relates directly to conservation because in that speech I said we can't really get back to work until we have integrated conservation into our water planning, just as we integrated environmental criteria. We've got to be able to demonstrate to the people that we've observed conservation measures. The nation's current economic difficulties are another matter. I suspect that we risk being delayed more by money than anything else, but I foresee a fairly large investment in the water program. There's much to be done. I believe the necessary conservation measures, and our economic problems will affect *when*, not *if*, we resume developing water resources.

Our decision to maintain a minimum fleet and contract out some of our dredging marks a new era in water resources development. It must have made you nostalgic when the dredge Essayons was retired.

It did. The Essayons, though, was retired for two reasons; one, she's not really sea-worthy any more, and the cost to fix her up was prohibitive. And two, we do have a new larger dredge coming into service very soon. Our fleet is changing though because the dredging industry is putting the hopper dredge business into the national private enterprise system.

I think the program that put dredging out into the competitive arena is already proving to be a good idea. Though it was painful for our people to give up those missions, the taxpayers are now getting a lot more dredging for their money because of competition. The government fleet wins some dredging contracts and the private industry fleet wins some but in each case the

lowest price gets the job. The accumulated savings are mounting every year by millions of dollars.

Energy is clearly a high priority. How do you expect the new national emphasis on energy to affect Corps programs.

It already has. We are fortunate that we were able to get a couple of studies going four years ago—before the energy crunch worsened. Those studies will soon be available. One of them, the National Waterways Study, has to do with water transportation, which indirectly affects energy because so much of the cargo transported is coal and other energy products. The



The Essayons.

other study is of hydropower, which of course has a direct impact. We are looking at all the potential large and small scale dam sites in the country. I think the study is going to prove we can at least double our hydropower output. We are assessing all forms of hydropower potential: lowhead, pumpback, run-of-river, major power projects, and additions to existing projects. It's going to be a most helpful study.

The Corps has studied, as you said, the nation's waterways and its hydropower resources. Do we need a national flood management study?

Well, we need to at least identify the major flood problems in the United States. Some people seem to



Lock #1 on the Green River, Louisville District.

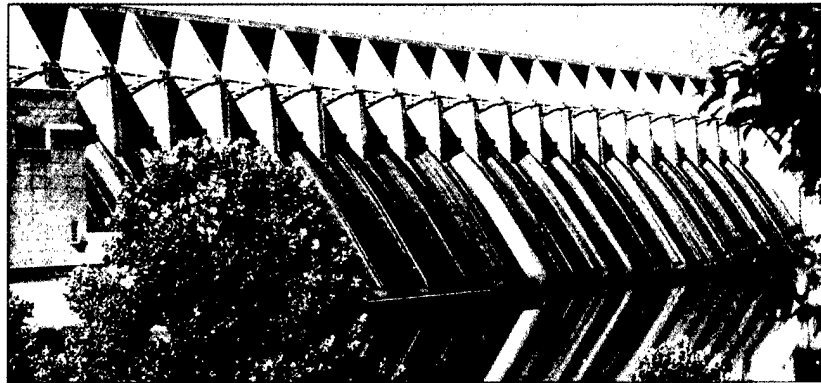
believe that there are few real flood problems left. This is not the case, and a worthwhile effort could be made to describe the extent of the major flood problem areas and the best means to deal with them. We have perhaps ten or twenty places in the country where people are literally sitting on a powder keg, and they are going to get hurt unless we do something about it.

We hear a lot about non-structural solutions to flood problems now. Is this the solution of the future?

Non-structural measures alone cannot solve all our problems. However, non-structural solutions are considered in every situation we encounter—flood control as well as other water resources projects. We seldom develop a plan that is totally non-structural or totally structural. We integrate both methods on a case-by-case basis.

What about the results of our dredged material research program? Did they provide the guidance you expected and was it worth 30 million dollars?

It was worth \$30 million; in fact it's paid for itself already. The study was targeted at a national attitude that all dredged material is polluted and automatically bad. This study was started back in the very early 70s and what it's done, if it's done nothing else, is proven to the world that most dredged material is *not* bad. As a matter of fact, a very high percentage of it is useable material and really a national asset. If it did nothing else, that valuable goal was accomplished. In addition we learned some new techniques for storing dredged material: how to handle it, what kind of dredges to use and many other things. In the Great Lakes alone we saved over \$20 million right off the bat since we didn't have to build dikes to contain dredged material.



Clark Hill Dam, Savannah District, has a generating capacity of 280,000 kilowatts.

The Corps is involved in two major cooperative programs: the National Program of Inspection of Non-Federal Dams and EPA Construction Grants Program. Is this team work approach working?

Well yes, of course we work with other agencies on everything we do. In the EPA grants program our two agencies are working together, using Corps talents in construction management and EPA grants authority, to provide the people water quality and pollution control structures. It seems to be working quite well. We have written a new agreement with EPA which will give us more authority than in the past to manage construction, but it's still their program. I'm sure of one thing, it's certainly paid for itself and the public is getting better facilities now that the Corps is involved. We're a lot more confident that the money is being spent the way it was intended, too. The inspection of non-Federal dams is primarily our program, though we work cooperatively with state agencies. Some states have more capability to do dam inspections than others. The Corps has developed training programs to assist states. There is no other way to go in government except through cooperation between the agencies which have interest and responsibility. If we've learned one thing in the last ten years it is that no agency can, by its own drive, push a project through the system.

What about the Corps overseas activities? Do they detract from our domestic programs? Are they really an asset to the nation and the Corps?

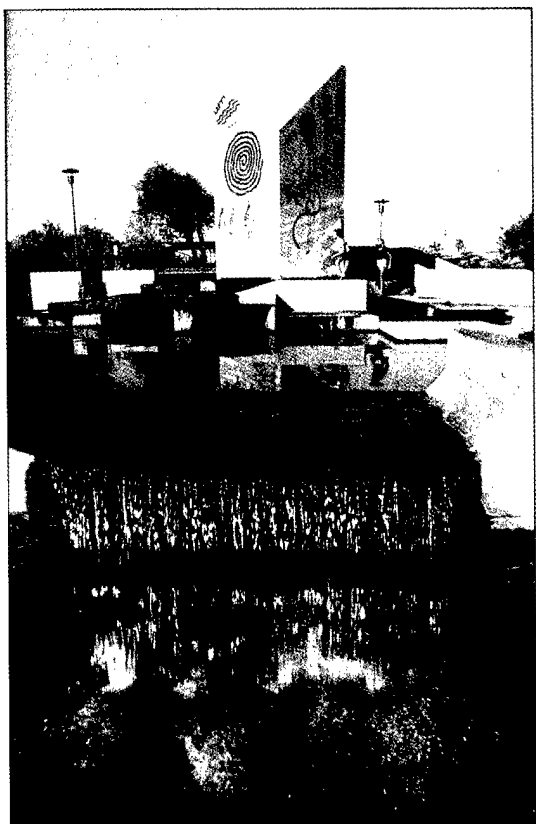
Yes, they are. We wouldn't be there if they weren't. We participate only at the State Department's request, and every place we've been we have made friends for the Corps and the nation. Our involvement and presence often serve to reduce tension. In our arena we've improved our ability to do business. Benefits come to us because overseas activities have allowed us to keep some of our talents sharp. We've learned a great deal. In addition, during a period of a somewhat diminished public works program here in the United States, overseas activities have assisted us in keeping

our work force stabilized. We attract better young professionals to the Corps by the very fact we do the overseas work. We are in tough competition for the best talent, and our work in the Mideast, Israel, and China is a drawing card. This is a hard point to sell though; I'm chastised often by Congress because they fear the foreign program is detracting from the continental one. Really, though, there is very little conflict between use of our manpower domestically and overseas. When we take people out of jobs in the United States and send them overseas, there is some small, short-term adverse effect on the place they leave. But they come back, armed with new engineering experience and insight. So if you can exclude the initial adverse impact, in the long run the overseas program is good for us and for the nation.

I see that conservation will be in our future. And we will probably see some changes in our navigation programs and some increase in hydropower production. It's likely that we will be given an expanded mission in the area of water supply. Do you see other changes in the 80s?

The major change I expect in the Corps in the near future is improved planning of our operations and maintenance work. We plan for water resources development on a regional and even a national basis—assessing present and future needs, costs, benefits, and alternatives. Now we need to begin planning more carefully for the operation and maintenance of our established program. Planning for O&M we call it. Half of the money appropriated to the Corps each year is used for O&M, which covers managing recreation sites, dredging rivers, disaster recoveries and many other things.

Our planning needs to be broken down into our day to day business of cutting grass and painting and our long-term maintenance—major repairs to buildings, locks and dams, replacement of generators. Our long-term maintenance costs can be forecast and need to be planned.



McDowell Exhibit Plaza at Scottsdale, Arizona is part of the Indian Bend Greenbelt floodway. The floodway provides open space for recreation in non-flood times.

An important part of our O&M is our recreation program. It involves both short and long-term maintenance planning as well as planning for activities. This program has been expanding rapidly in recent years. We now host over 400 million visits each year at our projects and we expect that number to grow in the future. The expansion is partly due to the energy crunch—many Corps lakes are located in areas of high population density—and partly due to our increased awareness of public needs. We now provide more facilities, and ones which are more diversified, at our projects than ever before. The atmosphere is a reflection of our new management policies. The managers we now put in charge are people who know how to deal with the public. Some of them are Corps-trained, either at our new facility at Huntsville Division or through a Huntsville-monitored University program. Years ago, we weren't so sophisticated. If our construction engineer was nearing retirement we'd say "Well, look Joe, why don't you just stay here and run the project? You built it so you know how it works." He did know how it worked and he could keep it working, but he wasn't necessarily good at dealing with visitors. Our managers are a different sort today; they are skilled at working with people.

Don't our managers have to be pretty well versed in the field of wildlife management?

Yes, We have developed reservoir management plans aimed at maintaining the balance between use of the land for recreation and preservation of land for wildlife. This is an area in which we have done a great deal of planning and have asked the help of other agencies and the general public. We have not solved all our problems. We still have things to learn about habitat needs of some wildlife species. And, we are still negotiating to insure public access to Corps land in some projects. There are other management problems, but viewed as a whole, we have a recreation/resource management program of which we can be proud.

We've built quite a few visitor's centers recently, haven't we? I'm sure these enhance our ability to greet the public.

Yes. I am very pleased with our visitor information facilities. We have regional facilities located near population centers which present regional and Corps history, depict local archaeological and wildlife features, and show locations of projects in the area. We also have smaller centers for individual projects which explain the project and provide the visitors with information about the recreation facilities available for use.

We have a rather large emergency operations function too. Is this function considered Corps operations and maintenance work, or is our work now directed by the new Federal Emergency Management Agency . . . FEMA?

Well, it's a little of both. We don't always work through FEMA. If there is a flood, I have the authority as Chief of Engineers to direct our people to fight it. We don't have to wait for anyone. In fact, the Division Engineer in charge in the area of flooding has the authority. We can divert funds from other public works projects and then later go to Congress to request their replacement. Once the flood is over, if there has been a lot of damage, the governor can ask



Dredged material provides habitat for Royal and Sandwich tern colony, Cape Fear River, North Carolina.

the President to declare the area to be a national disaster. If the President does so, the director of FEMA has the responsibility to provide whatever relief is needed. If the work requires engineers, FEMA will pay us to do it. So the distinction is whether the emergency is declared to be a national disaster by the President.

Our emergency work is not only with flood problems but also with tornadoes, hurricanes, blizzards - and even volcanic eruptions. We enjoy a fine reputation for efficiency and responsiveness. Apart from money funded by FEMA, the Corps spends about \$44 million annually on disaster relief. The year we had Agnes we spent \$80 million. This year, with Frederic, flooding in

California, and Mt. St. Helens we expect to spend over \$250 million.

It is our emergency operations functions which would most closely align with our mobilization assignments in case of war, is it not?

That's true. In the final analysis the Corps of Engineers is an Army unit which must support the total Army during wartime. Our work during national disasters keeps us in training. We are very serious about our mobilization mission and are right now evaluating our capabilities. If we are ever asked to mobilize, we want to be ready.



The Chief and other members of the U.S. delegation on a recent tour of China.

We've talked about the Corps program as it stands today, how it got there, and how it might look in the future. But, to sum up, if I held you to one word could you find one which would characterize the Corps during your term as its Chief?

If I can use just one word, it will have to be "survival." That was the critical challenge. President Carter announced during his campaign that he was going to re-orient the water resources program. He specifically mentioned the Corps of Engineers. After his inauguration he developed a list of projects which he wanted to discontinue—the famous "hit list" of

early 1977. At the same time the President appointed a group to analyze the organization of the Executive Branch to propose improvements in several areas, including water resource management. I felt that the future of the Corps of Engineers in water resource management was in jeopardy. If we were to survive as an institution, we would have to prove our worth as the nation's finest engineering and construction management organization. This challenge caused us to evaluate ourselves carefully to find and eliminate our weaknesses and to capitalize on opportunities for strengthening our base and our performance. Ninety eight percent of our projects passed the President's project review. And because of conscientious and objective work in programs such as dam inspection, regulation of wetlands, and others, we were able to convince Administration leaders that the Corps not only should remain in the water resource business but should be given greater responsibilities. So—the bulk of my tenure as Chief of Engineers has to be identified with all of those things related to "staying-in-business."

General Morris, you are retiring now after a full career with the Corps of Engineers climaxing with your assignment as its Chief. How do you feel about your years with the Corps?

I've loved every minute of it. The Corps' work in water resources development is vital to the nation—to its economy and its security. We can be justifiably proud of our past performance and with the National Waterways Study and other important planning studies, the Corps will go on to do even better work. But, you know, the Corps alone can't be fully responsible for developing and managing the nation's water resources, just as we can't take full credit for our accomplishments. In the final analysis, we take our orders from and set our course according to the public we serve. I've thoroughly enjoyed working with the public and with Corps people—managers and laborers alike. I'm sure the Corps will continue to have an important role to play in the development of water resources in the United States and in support of the total Army. ■

Appendix G
**“Construction Management Training:
An Industry/Academia Challenge”**
The Military Engineer
November/December 1986

Construction Management Training

An Industry/Academia Challenge

By LTG John W. Morris
United States Army, Retired

OVER the last couple of years, a continuing dialogue has been occurring throughout the United States about "more construction for the money." This is the result of the work done by The Business Roundtable in evaluating problems in the construction industry. Many recommendations from these evaluations relate to better leadership, safety, scheduling, and management. This brings us to the basic question: "Where do managers come from to oversee today's investment of billions of dollars in construction?"

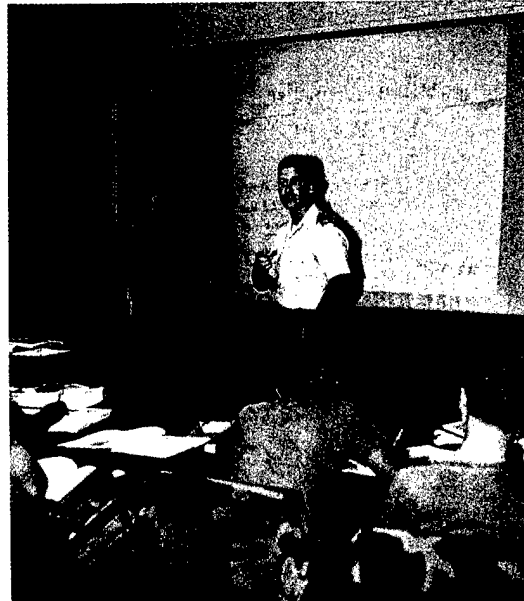
There are 325,000 people who manage construction projects and the majority have learned or are learning on the job. Many are good solid managers. A basic concern, however, is the cost paid in mistakes, correcting errors, climbing the steep learning curve, and, to a lesser degree, from a narrow perspective due to continued association with a specific type of work, often in the same location.

Interestingly, there is no shortage of school-trained business managers. The formal education systems in the United States and throughout the world have long produced bachelors and masters of business administration. This is not the case with construction engineering and management. Prior to 1960, management courses relating to engineering and construction were rare and, conversely, engineers were rarely found in management.

In the absence of academia as a source, one of the principal fields for training engineer managers has been the military. The assignment and promotion systems within the military move young men from job to job to management. Consequently, he learns—and expects to learn—to manage people after on-the-job experience. Perhaps this is why so many chief executives or chief operating officers of large firms come from the military.

Changes in Academia

The situation in education began to change in the mid-1960's. Courses in industrial engineering began to appear and Stanford University started a construction engineering program and offered a degree. These events were regarded with some curiosity. In the late 1950's, I was responsible for the assignments of Engineer officers below the grade of Colonel; and, at that



Many CEO's and other top managers of design and construction firms come from the military ranks. The assignment and promotion system moves young men and women from job to job and then into the managerial ranks. The Engineer Officer's Basic Course at Ft. Belvoir is often the start of just such a career in construction management.

time, our Chief of Engineers' policy was for 95 percent of the Engineer officers to have bachelor degrees and one-half to have graduate degrees.

In selecting courses for our officers to attend, we looked for civil, electrical, and mechanical. We considered industrial and construction engineering as peripheral and not mainstream types of education. This concept continued for some years, so the problem was not only a shortage of educational institutions which provided training in management, but the profession itself was not too concerned about the value of this training.

Recently, however, changes have begun and today 60 universities include construction engineering management courses in their curricula. Of these, 44 have courses at the graduate level; however, most of them offer no degree program. Universities offering degrees

often include courses in both engineering and business. Overall, however, there is no specified or basic group of courses or standard for recipients of Construction Engineering Management degrees.

Other problems also exist, such as the lack of qualified teachers. This does not mean that those who are teaching are not excellent people, but they have limited experience in construction engineering management. Also, teachers receive lower salaries than those who use similar or the same talents *on the job*. There are other problems in the universities, such as the competition for the course offered by the College of Business, College of Engineering, or the College of Architecture.

Equally important are the industry's lack of interest in seeing that educational institutions do a good job and a general lack of acceptance of construction management as a profession. Finally, there is a shortage of dollars for research—research being the amount of money universities need to supplement instructors' pay and also to underwrite an investigation to solve various problems related to management.

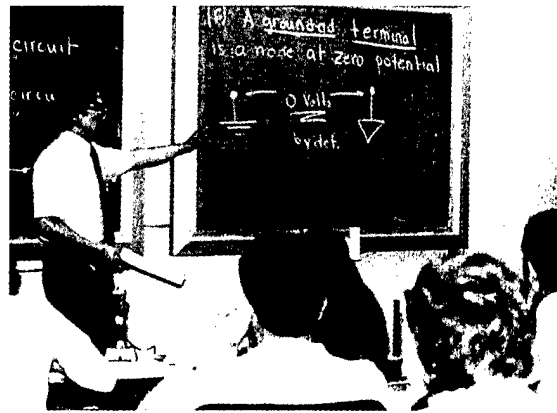
The University of Maryland Program

In the fall of 1982, I was asked to help the University of Maryland set up a Construction and Engineering Management course. Why they asked me is not entirely clear. Nevertheless, having had 40 years experience in the field, I had many contacts and associates to call on for help. In becoming involved in the situation, I learned that some of the problems I just related had been recognized and were being resolved at Maryland. Most important, this course had been financed by the generous donation by a Regent of the University of Maryland, James A. Clark, of Hyman Construction Company and Omni Construction. Also, the College of Engineering took firm control by initiating and assuming responsibility for the program.

A committee was established (with Mr. Clark as chairman and myself as vice chairman) to develop this construction engineering and management program. The committee also included individuals from Stanford University, the Corps of Engineers, the University of Maryland, and industry.

Establishing Course Criteria

We began our work with a survey, by personal contact and letter, of principal executives of some major U.S. companies involved in engineering and construction. We asked these leaders one fundamental question: "If you were to receive a graduate from the University of Maryland's Construction Engineering Management course, what would be the educational assets that you would like him to bring to you?" From



Engineering teachers in academia generally receive lower salaries than those in industry, contributing to a general shortage of college teachers.

the responses to this survey, we developed a White Paper, which included certain basic conclusions.

- The course would be a graduate-level program. The committee, based on input from industry, concluded that not all B.S. degree undergraduates knew if they were managerial material and if they wanted to go into management.
- We felt that a strong B.S. degree program was essential to developing good construction engineering managers. Consequently, we did not wish to weaken the criteria and degree requirements in the basic fields of engineering.
- The graduate-level approach gave industry leaders the time to evaluate an individual's potential for growth as a manager.

The White Paper recommended 30 credit hours, of which four courses (or 12 hours), would be from the College of Business. The remaining six courses, or 18 credit hours, would be from the College of Engineering. This turned out to be a very good breakdown and allowed us to start our course using available assets. The industry responses were fairly clear as to the subjects most valuable to them. The following were mentioned in the industry leader responses in the percentages shown:

Contractual Law.....	82%
Construction Methods...	82%
Leadership.....	75%
Financial Management...	75%
Managerial Systems.....	73%
Cost Control.....	55%

Subjects mentioned less frequently included project simulation, local relations, materials, mega-projects, statistics, and accounting.

The White Paper was approved by the appropriate authorities and classes began in 1984. By 1985, a faculty of four was established and hired, and the student load had grown to be the second largest in the graduate-level engineering course. A class on one subject was attended by 40 students, of which half came from industry.

The construction industry, which is served by academia, should help evaluate university CM programs and speak out on how well the universities are doing.

Evaluating the Program

Having been privileged to be the first Chair Professor in charge of the graduate-level Construction Engineering and Management course and having overseen the beginning of the instructions in the spring of 1984, I was interested to know how well our course correlated with other university courses and also with the industry's needs. An evaluation of the latter was based on five inputs: the Associated General Contractors had completed a study involving 431 responses; The Business Roundtable, 112; Project Management Institute, 59; Frederick Mueller's independent study for a doctorate degree, 44; and the earlier mentioned University of Maryland survey. By evaluating these data, we were able to provide a list of sought-after skills in a single industry.

We then surveyed the 44 universities mentioned above. They were fairly well distributed geographically—8 in the far west; 10, mid-continent; 11, midwest; 7, northeast; and 8 in the south. This distribution meant that not only did we see what was happening in that regard regionally, but we were also able to bring in all major schools in the country that have construction engineering and management programs. The courses offered by these universities parallel quite closely the industry's needs. For example, among the 10 courses appearing most often in the university survey, seven of them are mentioned in the broad industry survey which differed somewhat from the more limited University of Maryland survey of industry leaders. We also found that only four universities (9 percent) provided all seven and about 30 percent offered at least six. (The University of Maryland was one of the four universities that provided all of the courses requested by industry in the survey.)

- Planning and Scheduling
- Contract Law
- Project Management
- Construction Methods
- Cost Estimating/Engineering
- Engineering Economics/Cost Control
- Decision Making

Four subjects on the industry list were not included in the education institute survey results: Human relations-leadership; and financial, human resource, and business management. These four courses would be appropriate ones to be offered by the College of Business.


Improving Support to the Industry

Besides learning about the close correlation between the needs of industry and the university offerings, we identified two opportunities to improve the

educational system's support of the industry's needs: To establish a core curriculum which would be adopted by all universities to serve more consistently the industry and for the industry to express a stronger voice in measuring academia.

The present perception of success at universities is often based on the amount of research money collected and how they compare to other universities in their peer group. This approach seems somewhat off target because engineering is a science and management is an art. It is not only difficult but also inappropriate for engineering colleges to evaluate success and management training in the same way as they do engineering education. Scientists are not necessarily good management teachers. Therefore, the industry served by academia should help evaluate university programs through the quality of the product and speak out on how well the universities are doing.

THE educational systems in the U.S. are steadily expanding their programs for developing construction engineering managers. This effort is timely—in fact, overdue if the U.S. engineering and construction industries are to keep pace internationally and domestically by becoming more efficient at the project and program levels. Even so, academia should not proceed without carefully targeting their efforts at the needs of the industry that their products will enter.

The trick to total success depends on close and continuing relationships between the universities and the engineering construction industries to develop a core curriculum for construction engineering courses and to establish, within industry, a mechanism to evaluate how well the product being provided by our universities meets their needs. Bringing these two elements together will require co-ordination and planning. SAME, as part of its support of "More Construction for the Money" endeavor, seems a likely and qualified candidate to guide and manage this much-needed effort. 



LTG John W. Morris, USA (Ret.), is Chairman and CEO of PRC Engineering Group, McLean, VA. As a professor at the University of Maryland, he developed a graduate course and was designated to fill the Construction Engineering Management Chair. He has extensive experience in contract administration, project control, and construction management. In 1980, General Morris retired as Chief of Engineers, Army Corps of Engineers. He has received many awards, including a Presidential Citation for Management by President Lyndon B. Johnson. In 1977, he received the "Construction Man of the Year Award" from Engineering News-Record and was inducted into the National Academy of Engineering. General Morris is a graduate of the U.S. Military Academy and holds a Master's degree in engineering from the University of Iowa.

Appendix H
“Changing Role of the Corps of Engineers—1970–1980”
The Waterways Journal Weekly
29 June 1987

27 May 1987

Changing Role of The Corps of Engineers—1970–1980

I was asked to write about the water resource program during my term as Chief of Engineers 1976–1980. In a way, this is like discussing the last half of a one-mile race—it overlooks the start. So, I will take some liberties and extend the period from 1970–1980 during which I became and remained involved daily in the Civil Program and the Corps of Engineers as it accommodated itself to major shifts in national policies toward environment cost-sharing, etc. The backdrop for measuring these changes was my earlier experience in Savannah and Tulsa Districts during the “heyday” of federal investment in water resource programs.

In the early sixties a good economic analysis and a strong benefit-to-cost ratio were the best assurances of success in one of the bi-annual “omnibus” bills. These successes were also the fruits of strong local support and powerful representation in the U.S. Congress which were then in full bloom in many areas of the nation. None more evident than in the region of the Arkansas and Red Rivers. As Tulsa District Engineer at that time, there was a real challenge in meeting and fulfilling the federally legislated project load and I suppose some people thought the program would last and last for years if not forever. But soon thereafter the local support began to wane, congressional power for water resource development weakened, and national priorities were modified to the point that by 1980, U.S. Government’s investment in new water projects had dried up and we were in the middle of a 15-year hiatus in the authorization process.

To understand the reasons for the “holiday” from new public works and the basis for certain concurrent changes, we need to reflect briefly on the causes of weakened local and national support for such investments. First, by 1970 the national water program was well advanced toward realization. New projects were spottily scattered across the country and, as a group, less attractive than the projects already authorized. Next, much of all public works already in place was beginning to need major rehabilitation. Also, growth and development were pressing against virgin America, causing, in many areas, a reduced quality of life; and, the U.S. economic situation was entering a tough period. But, whatever the reasons, the fact remains that the water resource development program was an early casualty of new national priorities for environmental and economic attention. The extent and seriousness of its wounds are still being evaluated almost two decades later and as with most sudden and long term illness, major adjustments in lifestyle occurred.

The first major impact came with the passage of the National Environmental Policy Act in late 1969. This sweeping legislation was 10 years too late, in my opinion; and, therefore, was imposed summarily rather than gradually and efficiently. In one

moment every project was in non-compliance, and new starts suddenly found themselves at the foot of a steep climb which was obscured by the uncertainty of how to proceed to the top. Seven years later President Carter announced his famous "hit list" which, in spite of how it seemed to many, had the cleansing effect of forcing once and for all a total review of every project. This review put to rest the many questions about old projects and allowed attention to turn to newer problems. In the meantime, several projects were stopped, to include the Cross Florida Barge Canal; scores challenged, delayed and often changed, L&D 26, Truman, New Melones, Tenn-Tombigbee, Gallipolis, etc.; court cases flourished; EIS's became a household word; costs rose; and the decentralized character of doing business constrained as regulatory and permit requirements grew. NEPA even spawned a Brookings Institute study of the Federal activities to determine: "Can Organizations Change?" Since the programmatic system had changed, the management had to adjust or lose. Gen. Fred Clarke, then Chief of the Corps of Engineers, saw the need and, because of the unique military/civilian organizational character of the Corps of Engineers, was able to redirect policy and indoctrinate new Corps District and Division leaders quickly and accordingly. The changes which ensued within the Army Corps of Engineers have impacted the agency structure and procedures from top to bottom and these changes have been felt and have left their imprint throughout the entire water resource management scene both in the U.S. and, to some extent, worldwide.

Two side effects grew out of the NEPA.

- ▶ First was the flurry of effort to challenge the authority of the executive agencies to proceed with various elements of the water program. Lock and Dam 26 was delayed on the authority issue as much as environmental; the final court case on the Tennessee-Tombigbee was founded in the exercise of authority by the Secretary of the Army; the Cross Florida Barge Canal provided the platform for testing the President's authority to impound congressionally appropriated monies. These ordeals in themselves, while painful, have clarified the future of using executive authority to implement certain existing water resource or related laws.
- ▶ Second, the economic factors used to justify projects had a new partner—environmental effects. These partners did not always get along too well; however, what appeared to be an "unfriendly" takeover early in 1970's has evolved into a rather smooth affiliation in the mid-1980's.

Environmental policy slowed water resource development, and the follow-on attitudes toward traditional national economic policy for water programs stopped the program cold. Only within the past year has legislation containing new investment criteria given us reason to look for resumption of new water resource work.

Cost sharing, which was at the heart of the economic issue, has been integral to water resource development at least since the Flood Control Act was passed in 1927. It has taken a variety of forms and degrees as laws and policies were enacted for water supply, recreation, hydropower, etc. Navigation's particular exclusions came under renewed assault in the mid-1970's and the attacks strengthened as the national economic situation worsened and means were sought to transfer more costs from the federal government to others, that is state and local governments and private business. By 1972, "let the beneficiaries pay" had become a litmus test in the office of Management and Budget and other places in the Federal arena. While this attitude had little effect on water project formulation at the Corps field level, it became a true factor for delay above the Office of the Chief of Engineers. For several years, new projects which had passed all the tests and consequently were recommended for authorization never made the trip up Capitol Hill to the Congressional Committees. Consequently, the amount of new work declined and existing older projects continued to deteriorate as they served out their programmed life. As 1980 arrived, the funding for the O&M element of the budget passed the construction element for the first time and signalled that the character of the Corps had become considerably different than in the glamour days of the mid-1960's.

Finding a way through this shelving process proved difficult and tedious and often targeted on the tough issues of sharing costs for constructing and operating navigation projects. As it turned out, well over a full decade was required to legislate the new cost sharing rules. During this period other lesser changes were occurring under the banner of "privatization." The Corps looked to private enterprise to take over some portions of traditional Corps workloads—hopper dredging became a new private investment, more recreation activities and certain plant operations were contracted out, greater percentages of engineering and design were passed to others, constructive management contracts became acceptable, private investors were allowed to add power at existing Corps of Engineers projects and federal lands, to name a few.

As already intimated, changes in national and economic policies and priorities had major impacts on the Corps of Engineer procedures. More than that, however, were the effects on the type of work itself. The decline in public works came at a time when other engineering roles for the U.S. were rising at home and abroad. Some examples include the growth in the U.S. Military program, the interest of other nations in U.S. public works expertise, American at home concern for waste water, hazardous waste and energy matters, infrastructure and safety problems.

The Corps of Engineers was called upon on numerous occasions to address the engineering requirements of such programs. At the same time, the Corps did take time to study comprehensively and report to the nation on the national hydropower potential and the description of the first class water transportation system it needs and deserves.

As a consequence of these efforts, the capability and capacity of the Corps of Engineers to return to active development of our water resources has remained intact and is ready for the work which will appear rapidly as the new Water Resource Development Act is implemented.

As in the past, the future will have its share of major issues. But unlike the recent past, the immediate future will be one of getting back to work, of more activity, and of "doing," and that is exciting. For the longer view, a couple of presently suppressed issues will surface and must be resolved.

- ▶ What is the role of the Federal Government in the Water Resource Field? Should it not look to the long term needs of our people and development of our resources? The current policies seem to be concentrated on short term matters.
- ▶ How can we upgrade the efficiency of the systems built piecemeal by both federal and non-federal agencies over the past 50–60 years?
- ▶ What is our national water supply plan?

I'm sure more and possibly deeper issues than the above will emerge in the next decade; however, I doubt that any issue, or combination of issues, will have greater effect or a more far reaching impact than the environmental and economic concerns of the public and the resulting national policies adopted by the U.S. government between 1970 and 1980. While the water resource program has been seriously ill during much of the time since 1970, it has survived and has an excellent chance for full recovery and good health as we look to the future.

The Corps of Engineers has experienced major changes right along with the water resources program. The Corps similarly is also enjoying its best health of many years and is ready and anxious to be a major player in Building Tomorrow—Today. One thing is clear: The future of the Corps of Engineers and the national water program continue to be interrelated as they have been for over 200 years of America's growth and strength. The Corps cares. Essayons!